APPLICABILITY OF

NATIONAL DATA BUOY SYSTEMS TO

REFINED NATIONAL REQUIREMENTS FOR

MARINE METEOROLOGICAL AND OCEANOGRAPHIC DATA

Volume II: APPENDIXES

by

LeRoy H. Clem Project Scientist

and

Gaylord M. Northrop

October 1968

TRC Report 7493-332b

Prepared for the U.S. Coast Guard
Under Contract No. DOT-CG-82504-A

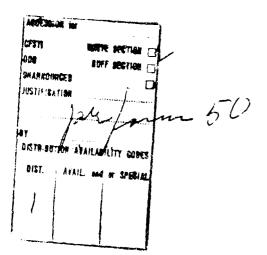
This design with a both opproved for public release and sale; its distribution is unlimited

E. J. Aubert G. M. Northrop Principal Investigators

THE TRAVELERS RESEARCH CENTER, INC.

250 CONSTITUTION PLAZA, HARTFORD, CONN. 06103





This study was conducted in support of the U.S. Coast Guard National Data Buoy Systems Designated Project Office under Contract DOT-CG-82504-A.

Views or conclusions contained in this study report should not be interpreted as official opinion or policy of the Federal Government.

APPLICABILITY OF NATIONAL DATA BUOY SYSTEMS TO REFINED NATIONAL REQUIPEMENTS FOR MARINE METEOROLOGICAL AND OCEANOGRAPHIC DATA

Volume II APPENDIXES

by

LeRoy H. Clem Project Scientist

and

Gaylord M. Northrop

October 1968

TRC Report 7493-332b Prepared for the U.S. Coast Guard Under Contract No. DOT-CG-82504-A

> E.J. Aubert G. M. Northrop Principal Investigators

THE TRAVELERS RESEARCH CENTER. INC.

250 Constitution Plaza Hartford, Connecticut 06103

FOREWORD

Contract Number DOT-CG-82504-A between the U.S. Coast Guard and The Travelers Research Center, Inc. (TRC) consists of five parallel activities. The five final reports stemming from these activities are entitled:

- (1) Applicability of National Data Buoy Systems to Refined National Requirements for Marine Meteorological and Oceanographic Data (two volumes).
- (2) Characteristics of National Data Buoy Systems: Their Impact on Data
 Use and Measurement of Natural Phenomens
- (3) Cost Effectiveness Sensitivity of National Data Buoy Systems: An Essay
- (4) Computer Programs for National Data Buoy Systems Simulation and Cost Models
- (5) An Analysis of Cruise Strategies and Costs for Deployment of National Data Buoy Systems

Each of these five reports is complete in itself, but it must be recognized that in all instances the other four activities both influenced and contributed to the results presented in each individual report.

The present USCG/TRG contract is an outgrowth of a study of the feasibility of national data buoy systems performed by TRC and Ale the Geophysical Associates for the USCG during 1967. Need was evident for investigation, research, and analysis in greater depth in several areas to support the concept formulation and deplotment planning efforts of the newly-formed U.S. Coast Guard National Data Buoy System Designated Project Office (NDBS DPO). This report and the other four cited above satisfy some of those needs.

All five TRC reports have benefited from the close cooperation and guidance afforded by the USCG NDBS DPO. Contributions have been made by Capt. J. Hodgman (Project Manager), Cmdr. V. Rinehart, J. Wesler, E. Parker, and P. Morrill, and Lt. Cmdr. W. Merlin (Contract Monitor).

The authors wish to acknowledge the technical support and contributions provided by Paul R. MacDonald and Paul V. Luty of the TRC Technical Staff.

SUMMARY, VOLUME I

This report documents the 1968 refinement of national requirements for marine meteorological and oceanographic data — initially compiled during the 1967 Study of the Feasibility of National Data Buoy Systems (NDBS)—and shows the applicability of certain postulated NDBS sensing characteristics to a subset of the refined data requirements. National data requirements to support operational and research activities are presented: they include physical, biological, chemical, geological, and radiological parameters which are to be measured throughout the world's oceans from the ocean bottom to 100,000 feet in the atmosphere. The data requirements are projected from the present to as far as 15 years into the future. The applicability of possible future National Data Buoy Systems (NDBS) to 1968 refined national data requirements is illustrated by the use, for reference purposes only, of the potential sensing capabilities (parameters and measurement characteristics) of a hypothetical data buoy "system".

The comprehensiveness and accuracy of the 1967 statements of data requirements were constrained by a lack of requirements collection precedence and by the usual difficulties encountered in collecting environmental data requirements from a wide variety of government agencies. The 1967 data requirements were collected without benefit of complete standard lion or reference to the sensing characteristics shown to be economically and technically feasible in the 1967 TRC study. The U.S. Coast Guard was assigned development responsibility for the NDBS in November 1967. The USCG National Data Buoy Systems Designated Project Office (NDBS DPO) established a data requirements refinement effort as one activity of Contract DOT-CG-82504-A, to obtain more up-to-date, accurate, complete, and clearly-defined statements of data requirements, suitable for the initial phases of system development planning. Standardization of terms and units was sought and refinement of data requirements in the Deep Ocean (DO)* and Coastal North American (CNA)** regions were solicited from the U.S. Government agencies that had provided data requirements for the 1967 feasibility study. Throughout this work, operational data requirements have been emphasized somewhat more than research requirements because of their more stable, long-term nature and because of the potential benefits that might be realized by

^{*}Beyond 400 n mi of North American Coast.

^{**}Within 400 n mi of North American Coast.

implementation of an NDBS capable of satisfying operational requirements at the earliest possible time.

The 1968 data requirements refinement and the analysis of the applicability of hypothetical NDBS sensing characteristics were conducted in several phases. First, from the results of review of 1) the 1967 statements of data requirements, 2) the 1967 projected estimates of 5-year buoy state-of-the-art (SOA), and 3) the results of the 1967 feasibility study, a hypothetical data-buoy "system" was conceptualized for reference purposes (with a few important exceptions, this "strawman system" was comparable to those postulated in the 1967 feasibility study). Second, an assessment was made of how well each set of the 1967 data requirements would be met by this hypothetical "system." Third, the results of this assessment, together with questions that arose during the analysis and assessment, were forwarded to the pertinent agencies for refinement action. Fourth, responses (including answers to specific questions submitted to the agencies) were analyzed, assessed, and translated into tentative NDBS sensing characteristics needed to meet data requirements in various marine regions. Finally, the refined data requirements were interpreted in terms of tertative observation sites in hypothetical DO and CNA "system" networks in 13 geographical regions called Modular Deployment Zones (MDZ).

After receiving the TRC review and assessment of their 1967 statements of data requirements, the agencies made refinements to their data requirements in light of the potential sensing characteristics of the hypothetical technologically feasible NDBS. When the refined data requirements were returned to TRC they were again assessed and tallied in the following manner: Total operational data requirements for observations of data at sites were sorted by agency-mission-operations (AMO), by agency, by DO and CNA regions, and by 13 geographical regions called Modular Deployment Zones (MDZ). In each sort, where applicable, the distribution of requirements to collect data at observation sites was established and the redundancy or common use of observation sites, where possible, was analyzed to reduce the number of required sites. For example, various operations within an agency (or among agencies) might have requirements for data (the same or different parameters) from the same type of observational network in a given geographical area. The total number of requirements for observations would thus be larger than the number of sites required to meet them.

The required observation sites were then related to those that conformed to the network sites of the reference "system." Required observation sites were then classified as "system" or non-"system." A similar analysis of the numerical distribution of specific parameter requirements was performed for "system" and non-"system" sites within each MDZ. For each of the 13 MDZs, the total number of operational requirements for data collection at each "system" site and corresponding total requirements for specific parameters have been established, thus demonstrating the degree of utility for each "system" observation site. The complete analysis also covers non-"system" sites in the same manner and illustrates the low operational utility of these sites. A similar, but less extensive, analysis was made of research requirements that were either met or partially met by the hypothetical reference "23 2000".

Finally, all operational requirements and selected research requirements (those research requirements for which the hypothetical "system" had considerable applicability) were combined into national data requirements and assessed for numerical distribution of requirements for observations at sites that could be assumed to be those of the hypothetical reference "system." This indicates the degree of potential utility of the hypothetical reference "system" for satisfying combined national requirements.

In total, there are 1,893 DO and 1,353 CNA requirements for data collection at sites for combined national interests that could be met by hypothetical "system" observation sites. When the potential reduction of observation sites made possible the augh the common use of a site is taken into account, the net number of required hypethetical system" observation sites is 261 for the DO region and 279 for the CNA region. Thus, a 7:1 average ratio of combined requirements-for-data-collection-at-observation-sites to "system" observation sites is achieved in the Deep Ocean MDZs, and approximately a 5:1 average ratio of requirements to "system" sites is established in the Coastal North American MDZs.

Of course, these findings are based upon the assumption that the 1968 statements of refined data requirements are the best presently available and collectively represent the national interests. About mid-1968, estimates of the relative values of parameters and observing layers were solicited from four agencies with operational missions. The agency responses indicated that additional information, related to data requirements

and useful for NDBS development planning, can be obtained. This initial effort has made clear that further work of this kind should be undertaken in the future.

The ultimate sensing characteristics of vario. National Data Buov Systems have not yet been finalized. The statements of data requirements presented in this report provide a base for assessment of hypothetical, technically feasible sensing characteristics, * thus adding another dimension to preliminary system development planning. Among other important features of evolving NDBS system development planning that will doubtless influence the NDBS sensing characteristics ultimately implemented are cost-effectiveness studies, trade-offs of potential development vs off-the-shelf equipment acquisition, relative values of data from contiguous geographical regions, research economic, social, and military benefits, and national and international relative worth of the NDBS (or, the data collected by the NDBS). Within this context, the conclusions of this study are as follows.

- The continuing continuing pattern of requirements for marine environmental data must be recognized. It is the result of numerous factors. Annual review and refinement of requirements will probably be necessary throughout the foreseeable future.
- Agency representatives have demonstrated a willingness and ability to estimate the relative importance of parameters and observing layers as part of the continued refinement of data requirements. A more intensive program to develop and exploit quantified ratings of this type should be undertaken.
- Horizontal spacings for Deep Ocean buoy networks of 600 n mi and Coastal North American network spacings of 100 to 150 n mi appear to be generally acceptable for an initial NDB, and appear to serve the stated needs of many activities. A total of 261 DO and 279 CNA data buoys would be needed to satisfy these horizontal spacing requirements in the ocean areas.
- Twenty parameters in the following table and their measurement characteristics (see Appendix IV) are suggested as representative of the basic sensing characteristics of a future DO or CNA ADBS. They are the result of the assessment of refined 1968 data requirements and appear to be generally

Technically feasible sensing characteristics are defined as those estimated to be achievable within 5 years by conventional development effort.

additional parameters of high common need or importance in specific geographic regions appears indicated. Development of new sensing capabilities for some of the additional parameters (e.g., upper air parameters) appears worthy of further consideration.

TABLE OF BASIC PARAMETERS SUGGESTED TO BE REPRESENTATIVE OF POSSIBLE FUTURE NDBS SENSING CHARACTERISTICS

Meteorological

- Air temperature
- Atmospheric electricity
- Atmospheric pressure
- Dew point

- Insolation
- Precipitation rate
- Wind direction
- Wind speed

Oceanographic

- Ambient light
- Ambient noise
- Current direction
- Current speed
- Salinity
- Sound speed
- Transparency

- Water pressure (depth)
- Water temperature
- Wave and swell:
 - Direction
 - Height
 - Period

In preparing this report, it has been the intent of the authors to document as clearly as possible the steps involved in the collection and assessment of data requirements, and the analysis leading to further delineation of the basic sensing characteristics of future National Data Buoy Systems. There is much yet to be learned about the marine environment; data requirements will likely change in the future in an evolutionary fashion. The NDBS will be but one data collection system operating ultimately within the context of a total national marine environmental data collection system. Thus, this report may be of use or guidance, not only in support of NDBS development planning, but also to agencies having requirements now or in the future for data from the marine environment and agencies having present or future responsabilities for developing and or operating the other data collection systems that will comprise the rest of the national marine environmental data collection systems.

Therefore, this report has, to the extent possible, been structured to keep this larger task in view, while at the same time concentrating on details most relevant to NDBS development.

Many of the results and conclusions discussed in this report are based on interpretations by the authors of data requirements collected from U.S. Government Agencies. Often, interpretations were made in areas that are recognized to be controversial. The cooperating agencies are encouraged to "set the record straight" on any point where these interpretations may not have hit the mark. Ultimately, it is hoped that through interactive efforts, such as described in this report, procedures that are both useful and acceptable to all concerned will evolve and the major task of developing an effective national marine environmental data collection system will be accomplished.

SUMMARY, VOLUME II

Volume II of the report, The Applicability of National Lata Buoy Systems to Refined National Requirements for Marine Meteorological and Oceanographic Data, contains the five Appendixes for Volume I, the basic report, as listed in the Table of Contents.

TABLE OF CONTENTS, VOLUME I

Section	Title	Page
1.0	INTRODUCTION	1
2.0	ANALYSIS OF 1967 DATA REQUIREMENTS	6
2.1	Source Documents	8
2.2	Comparative Tabulations	11
2.3	Tentatively Proposed NDBS Sensing Characteristics	16
2.4	Assessment of 1967 Data Requirements	27
2,5	Questions Derived from the 1967 Data Requirements	31
3.0	REFINEMENT OF USERS' DATA REQUIREMENTS	32
3.1	Information Packages for Agency Representatives	32
3, 2	Conference on Refinament of Data Requirements	32
3.3	Agency Responses for Data Requirements Refinement	34
4,0	ANALYSIS OF REFINED DATA REQUIREMENTS	35
4.1	Assessment of the Refined Data Requirements	35
4.2	Analysis of Refined Operational Data Requirements	39
4.2.1	Individual Agencies	39
4.2.2	Summary of Refined Operational Data Requirements	46
4.2.2.1	Required Parameters	46
4.2.2.2	Applicability of the Tentatively Proposed "System"	48
4, 2, 2, 3	Number of Observation Sites (Buoys) Required	50
4.2.2.4	Requirements by Modular Deployment Zones	54
4,2,2,5	Parameter Requirements and Locations in MDZs	59
4.2.2.6	Tentative Observation Sites in MDZs	62
4.3	Analysis of Refined Research Data Requirements	102
4.3.1	Summary of Refined Research Data Requirements	102
4.3.1.1	Required Parameters	102
4.3.1.2	Applicability of the Tentatively Proposed "System"	105
4312	1 Research Requirements Met by "System" Network Spacing	106

TABLE OF CONTENTS (Continued)

Section	Title	Page
4, 3, 1, 2,	2 Research Requirements Partially Met by "System" Network Spacing	108
4.3,1.2.	3 "System" Support for the Combined Research Requirements	113
5, 6	THE RELATIVE IMPORTANCE OF REQUIRED PARAMETERS AND OBSERVING LAYERS	118
6.0	CONCLUSIONS	128
6.1	Evolutionary Nature of Data Requirements	128
6.2	Possible Sensing Characteristics for NDBS	130
6.2.1	Possible DO and CNA Parameters	130
6.2.2	Possible DO and CNA Initial Buby Locations	133
7.0	RECOMMENDATIONS FOR FURTHER STUDY	151
8.0	REFERENCES	154
	LIST OF ILLUSTRATIONS	
Figure	Title	Pa _b ?
2-1	Sequence of events leading to refinement of National Marine Environmental Data Requirements by Federal Agencies	7
4-1	CNA horizontal spacing along U.S. and Canadian coasts	38
4-2	CNA horizontal spacing along western Mexican coast	38
4-3	Tentatively proposed modular deployment zones (13)	55
4-4, A-M	Tentative observation sites in MDZ for refined national operational data requirements	89
6-1,A-M	Distribution by MDZs of refined operational and research national data requirements at observational sites	137
6-2	The hypothetical "system" network of observation sites (279 buoys) for the CNA region	150
6-3	The hypothetical "system" network of observation sites (261 buoys)	150

LIST OF TABLES

Table	Title	Page
1-1	Chronology of 1068 Refinement of National Operational and Research Marine Environmental Data Requirements	5
2-1	List of Agency-Massion-Operations (AMOs) Contacted	9
2-2	Projected 5-Year Buoy State-of-the-Art (SOA)	12
2-3	Comparative Tabulations of 1967 Operational Data Requirements	17
2-4	Comparative Tabulations of 1967 Research Data Requirements	18
2-5	Tentatively Proposed NDBS Sensing Characteristics	25
2-6	Assessment Sheet for 1967 Data Requirements	28
4-1	Parameters Required by Agencies for Operational Activities (Refined Requirements) A. "System" Parameters; B. "Grey Area" and "Beyond 5-yr. Buoy SOA Parameters	47
4-2	Parameters Commonly Required for DO and CNA by Operational Activities (Refined Requirements)	48
4-3	"System" Applicability for Renned Operational Data Requirements	50
4-4	Number of Observation Sites (Buoys) Required for Refined Agency Operational Data Requirements	51
4-5	Number of Observation Sites (Buoys) Required for Refined National Operational Data Requirements	51
4-6	Proposed Modular Deployment Zones and "System" Sites	56
4-7	Refined Agency Operational Data Requirements for Total Required Sites by MDZ	57
4-8	Required Number of Observation Sites (Buoys) by MDZ for Refined National Operational Data Requirements A. "System" Network Sites; B. Non-"System" Sites	60
4-9	Refined National Operational Parameter Requirements by MDZ	63
4-10	Parameters Required by AMOs for Research Activities (Refined Requirements) A. "System"; B. "Grey Area"; C. "Beyond 5-yr. Buoy SOA"	103
4-11	Requirements of Research AMOs Met by Tentative "System" Network Spacing	107
4-12	Number of Observation Sites (Buoys) Required for Refined Research Data Requirements Met by "System" Network Spacing	109
4-13	Requirements of Research AMOs Partially Met by "System"	110

TABLE OF CONTENTS, VOLUME II

Section	Tit <u>le</u>	Page
1.	SUPPORTING DOCUMENTATION	1-1
LA.	Reasons for Non-Inclusion of Parameters in the Tentatively Proposed NDBS Sensing Characteristics	7-2
I.B.	An Example of an Assessment Sheet for the 1967 Data Requirements	1-7
I.C.	General Questions for Agency Representatives	I11
I.D.	Typical Specific Questions for Agency Representatives	1-14
I.D.1	Specific Questions Related to the Refinement of Operational Data Requirements	I-J4
1.D.2	Specific Questions Related to the Refinement of Research Dota Requirements	I-16
I.E.	List of Invited Agency Delegates	I-18
I.F.	List of Observers Invited to Data Requirements Refinement Meeting	I-21
I.F.1	List of Invited VIP Observers	1-21
I.F.2	List of Invited Organization Observers	I-73
I.G.	Attendees At Data Requirements Refinement Conference, 19 March 1968, Washington, D.C.	I-27
П.	COMPARATIVE TABULATIONS OF 1968 REFINED DATA * REQUIREMENTS	II-1
п.А.	Comparative Tabulations of Refine Operational Data Requirements	II-3
п.в.	Comparative Tabulations of Wifined Research Data Requirements	II-5
III.	CHARTS SHOWING GEOGRAPHICAL AREAS OF INTEREST FROM. WHICH DATA ARE REQUIRED FOR INDIVIDUAL AMOS	III - 1
nı.A	. Geographical Areas and Required Number of Observation Sites for Operational AMOs	III-2
III. B	. Geographical Areas and Required Number of Observation Sites for Research AMOs	III-24
IV.	ASSESSMENT SHEETS FOR 1968 REFINED STATEMENTS OF DATA REQUIREMENTS	IV-1
IV.A	. Assessment Sheets for Operational Activities	IV-2
IV.B	. Assessment Sheets for Research Activities	IV-47
V.	TENTATIVE APPROACH FOR THE ESTIMATION OF RELATIVE VALUES OF OPERATIONAL PARAMETERS AND LAYERS	V-2

APPENDIX I SUPPORTING DOCUMENTATION

APPENDIX I, PART A. REASONS FOR NON-INCLUSION OF PARAMETERS IN THE TENTATIVELY PROPOSED NDBS SENSING CHARACTERISTICS

In the 1967 compilation of 113 marine meteorological and oceanographic parameter requirements, there were 72 parameters that were considered to be measurable from unmanned buoys. After elimination of reclindancy (similarity of parameters) and the computed or derived parameters, this list of 72 was collapsed to the 43 printary (observed) parameters identified in Table 2-2. Of these 43, there were 19* parameters that met the criteria for inclusion in the tentatively proposed NDBS sensing capabilities (see Table 2-5). The remaining 24 parameters are listed alphabetically on the left side of Table I-1 with an indication by (0) and (R) whether they were required for support of activities that were operational, research, or both. On the right side of the table, the reasons are given why these parameters were not included in the initial tentatively proposed NDBS sen ing characteristics.

*For the purposes of this report, Sound Speed, the 20th parameter, is considered to be derived from primary (observed) parameters.

TABLE I-1
REASCAS FOR NON-INCLUSION OF PARAMETERS IN TENTATIVE NDBS

Parameter

Reason

1. Albedo (R)*

There is a potential instrumentation problem, probably requiring a stabilized boom hanging out over the water surface to obtain a meaningful pyroheliometer measurement. It must continually look down on the water surface (like the Total Radiation Out instrument) and not at other sources, such as the horizon or sky.

2. Bathymetry (0*, R)

Not a rapidly changing parameter that needs several observations a day. Better done by other means (e.g. a ship) to get greater coverage along lines etc. on a not-too-frequent basis.

^{*(}R) = Research, (0) = Operational.

TABLE I-1
REASONS FOR NON-INCLUSION OF PARAMETERS IN TENTATIVE NDBS (Continued)

	<u>Parameter</u>	Reason
3.	Biological Growth (R)	Requested only by Duke University for two points in the western Atlantic. The requirement is for a two-month duration of observation; other details are lacking.
4.	Bottom Photography (0)	Requested only by N00 Code 90 ocean surveys; there is a complete lack of detail. Considered best done by a ship or doep submersible since this is a single observation made occasionally, say once a year.
5.	Carbon Dioxide (R)	Requested only by Duke University for two points in the western N. Atlantic; also, there is a potential reliability problem when long unattended.
6.	Gravity (0)	Requested only by N00 Code 90 Ocean Surveys, it is a one-site-at-a-time requirement for a single reading. Considered best done by a ship or submersible.
7.	Ice Accumulation (R)	Requested only by the Bureau of Mines; most of the details of the requirements are unknown or not stated. Could be developed from airborne equipment and subspeed for buoys.
8.	Inclination (R)	Requested only by USN-Underwater Sound Lab. for less than 10 points in test ranges. This is for inclination of the mooring line at the sensor package. They have their own special equipment for this.
9.	Magnetic Field (0, R) Declination D	Requested only by ESSA C + GS; it requires a highly stable platform.
10.	Magnetic Field (0, R) Inclination I	Requested only by ESSA C + GS and requires a highly stable platform.
11.	Magnetic Field Intensity F (0, R)	Requested by three agencies. ESSA C + GS wants both intensity and direction. This requires a highly stable piatform. The USN Marine Engineering wants data from one

TABLE I-1 REASONS FOR NON-INCLUSION OF PARAMETERS IN TENTATIVE NDBS (Continued)

	Parameter	Reason
11.	Magnetic Field Intensity F (0, R) (Continued)	isolated area near the U.S. coast. Noo Code 90 has a one-site-at-a-time requirement for a single reading about once a year. Latter two requirements considered hes met by ship or sumersible.
12.	Oxygen (0, R)	There is a potential instrumentation problem: that of developing sufficient reliability and stability for a year of unattended, remote operation.
13.	pH (R)	Dequested only by USN Marine Engineering Lab. for bottom measurement only and one point at a time along the east coast and in the Caribbean Sea. Another case of potential instrumentation problem of sufficient reliability and stability for a year of unattended operation.
14.	Propagation Loss (0)	Requested only by N00 Code 90 Ocean Surveys; the details of requirements for spacing between source and receipt were not given. Better done by ocean survey ship, possibly in conjunction with a special buoy or more likely another ship some distance away.
15.	Radiological Chemicals (0)	Requested only by FWPCA for estuaries and near shore. Details of requirements are vague.
16.	Sediment Deposit (0, R)	Requested by three AMOs. Area wanted by USCG is polar region; outside area planned for system. Noo Code 90 requires two points only and details are lacking. The requirements by the University of Washington is for sediment load and details of measurement characteristics were unknown. This is a slowly varying parameter probably better done by other means.

TABLE I-1
REASONS FOR NON-INCLUSION OF PARAMETERS IN TENTATIVE NDBS (Continued)

	<u>Parameter</u>	Reason
17.	Tidal Fluctuation (0, R)	No instrumentation problem out to 100 feet depth. At greater depths there is a question whether the accuracy requirement (for absolute values) could be met by pressure gauge method due to both long and short term drift of instrument. This bottom observational instrument is steadily being improved. Requires continuing revaluation.
18.	Total Cloud Amount (0, R)	This parameter was judged better measured by weather satellite.
19.	Total Radiation In (R)	This parameter is assumed to be the same as insolation, because of the way the requirements were stated.
20.	Total Radiation Out (R)	There is a potential instrumentation problem. It may take a special boom hanging out over the water surface to obtain a meaningful measurement. This instrument must continually look down at the water surface and not at other sources such as the horizon or sky.
21.	Turbidity (R)	Requested by USN Mine Defense Laboratory for small area near Panama City out to 600 feet depths. Also requested by USN Marine Engineering Laboratory for a bottom measurement only and one point at a time along the east coast and in the Caribbean Sea. Expect measurement of transparency to be equivalent.
20.	Vertical Current (R)	There is a potential instrument reliability problem due to long unattended periods of operation.
23.	Visibility (0) (in surface layer)	There is a potential instrumentation problem. The instrument measures integrated backscatter from a controlled light source over a range of about 100 meters. This gives a measure of visibility sampled around the buoy

with some indication of greater distances.

TABLE I-1
REASONS FOR NON-INCLUSION OF PARAMETERS IN TENTATIVE NDBS (Continued)

	<u>Parameter</u>	Rease
23.	Visibility (0) (in surface layer) (Continued)	From a conservative viewpoint, this is not exactly how visibility is generally measured.
24.	Water Level (R)	Special for Great Lakes only. Involves reference of water levels to a standard marker on the land. Usually measured by fixed instrument like tide guage.

APPENDIX I, PART B. AN EXAMPLE OF AN ASSESSMENT SHEET FOR THE 1967 DATA REQUIREMENTS

Assessment of Agency-Mission-Operation (AMO) Data Requirements

The attached two tables present in brief form an assessment of an agency-mission-operation requirement for oceanographic and marine meteorological data. The basis for the comparison and assessment is the parameter-measuring cabilities and characteristics of the tentative operational National Data Buov "Systems" at the course of the 1967 and of the Feasibility of National Data Buov Systems.

In the first table, the given tentative data buoy system capabilities and characteristics are a product of common, operational requirements derived from Federal Agencies' requirements solicited in early 1967, and from estimates of the five-year state-of-the-art for buoys, sensors, and other system elements.

The development of National Data Buoy Systems by the USCG Project Management Office must be based on valid evolutionary. Trements for oceanographic and marine meteorological data, both for operational and research use. The purpose of this assessment and its review by agencies is directed, first, to ensuring that all stated data requirements take cognizance of the anticipated potential of the tentative operational data buoy system and, second, to ensuring that capabilities are provided where feasible to meet all other justifiable requirements.

The first of the two attached assessment sheets presents at the top the tentative data buoy system capabilities and characteristics for the 20 parameters to be measured to satisfy common, operational data requirements. In the center of the page are the agency's data requirements comparable to the tentative "system" capabilities. At the bottom of the page is an assessment of all AMO data requirements, in terms of "requirements fully met," "Requirements partially met and why," and requirements not met and why." The second page presents characteristics of all data requirements not met by the tenatively proposed "system". Parameters listed at the top of this page might be met - at least partially - provided certain problem areas can be resolved. Agency assistance is requested to establish where possible an acceptable approach for the development of a sensing capability for measuring these parameters. Parameters listed at the bottom of the second sheet are presently considered to be beyond the

five-year state-of-the-art for a buoy system operating unattended for at least one year. Agency concurrence, or non-concurrence and further assistance as noted above, is requested in conjunction with this assessment.

ASSESSMENT SHELT FOR 1967 DATA REQUIREMENTS

1. 151	IVIV	(VEL)	TEC.	1. IENIAIIVELI PROPOSED NOBS SENSING CHAFACTERISTIC	D.88 SE	しというと	CHAF	ACTER	STIC	-~											
2	Parametere				50	OCEAN KRAPISE	APMIC						1		i	2	T. C. 180. 33	14 THE COMPANY OF THE PARTY OF		2	15 Feb. 34
/	/		2	MilmRy	Sound	Water	W. press. Amblent Amblent Trans-	Amblen	Amblent	Trens-	Wave	THE PRINCES	mento " Atr	7 Jay	Atmos	Wave manurements Air Atmos Atmos Day (1860-	\$	3	Preside Wind Wind		7
Chracteristics	Ec.					i de la composition della comp	(0446)	<u>\$</u>	2000		ž	1	1	дизі,	Hert	Heet, kreen, point lation	Tie.		1	Diam's 195	7
Geographic	Sociation	Deco	COMPA. AS	Georgraphic Societion Deep Ocean/N. American Coast out to 446 m. ni	of to 468		all commences of the commences and described productions and the commences and the commences and the commences and the commences are considered to the commences and the commences are considered to the commences and the commences are considered to the considered to the commences are considered to the c		Arr. meters year			1			*	and the second section in the contract of the property of the contract of the second o	d	4	-	-	and the same of th
Vertical layer		38,c. 15	Mc. to See m depth	pth					:		į.		;	-	!		•	:		-	
Range (5 yr 80.A)		3 . 83 .	6.8% to 0 to	8 to 42 6/26	4500 to	o1 \$-	0 tc 10	0.920 -69.00		0	3	03 0 61		-25 80 0 65		23 60 10	23 55	3	100 to 25 to 0.1 to 0-13 in / 6 to 0 to	3	S
No.	Ī	:	1					2	8	E/GS	E .	2 1 8 1 1 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1	e R	200	_	1969 and 49 C 2.6 19/16	ر \$	M/41 9.2	*	Nr 380.	160 64
(5 TT 80A)	2	n	Se 17	or 17	1	5	¢.	ř.	8	K	9.3 ft 19.5 cm	0.3 ft 10.2 cm	·	31.0	£ 5	0.1 T .01 fr 8.1 mb 0.2T 1%	35.0		- N 10 0		. H
Deration of ob.	8	Mrs. or	Short per	last, or Short period ang. (Representative)	Pare down tack ve	-	,		I		7		1	1		*	-	-	å		5
	×	\$.	X. Y . 500 n. ml /s 160 n. ml	D. W.			:												***************************************	-	
Tatanas M.	2	76 H	26 Std. levals	(IAPO)			Γ 	2 Jerneto		-	á		+				-				
	These	6 hrs/ 3 lare	2 lare							T	;			-	-						· ·
Obe. synch. X,Y,(2) 10 mitt, (1 mits)	X.Y.Ø	10 mtc.							-				1						***************************************		
1	,									-			_								

Set	eogromate 1	Secret of	Deep Deean / W.	AMERICAN COACT ANT TO MAKE			
SFC SFC SEC 100 10 10 10 10 10 10 10 10 10 10 10 10	Vertical lay	į.	Ste Talste to Sfe They	57.0			The second second second
6 FT 2 Sec 100 0.5° (mb 10.5° (mb 10			Som Soom THEL	78.67	the same of the sa		1
100 FT 3 sec 100 0.5° (mb) 1° C 100 FT 3 sec 100 0.5° (mb) 1° C	Renge		o to at to 10 to	-6 To	0 To 2 To 2 To		200
100 GLINES GLS 900 CLI°C LEFT 2 SEC 100 OLSO 100 100 100 100 100 100 100 100 100 10			36c 6 KTS 40 0/20	35.2	100 40 000 31 0		0 % 0 M 0 M 0 M 0 M 0 M 0 M 0 M 0 M 0 M
Som 30 min I ret I hat 10 10 10 10 10 10 10 1	Markings o	3 000	100 GINTS 0.5 %0	2/2	237		O. I S KEC
X. T 60 my 2 Less English from 10 min 1 mi	Duration of	1	Somm 30 min		3		in/hr 'o or in
2 5 5 6 5 5 0			2	184			0/ 0/ Isu J.
2 STd STd Som		×	4	100	600	1004 1609	Paop
13/6 13/6 13/6 13/6 13/6 13/6 13/6 13/6	Carlo de la carlo		PIS	- / ALTON	18.8	Carp Com. C	100 m
X, Y COMM (94125 H75 H75 H75 H75 H75 H75 H75 H75 H75 H7	ì	ا ،	-	-	W/W	1/2 a/2	1
X, Y ORM TO BUT		į		136	163	1/2/ 1/2/	12/
2 SAIN	1	×	VO AUT	/APA	7.825	Hrshrs	NFS.
		Z	Z/8/0	A Para			10.414

3. RESULTS OF ASSESSMENT

ons fully most Wave Measurements, Air Temperature, Atmospheric Pressure, Day Porit, Precipitation Rate and Wind Velocity.

on partedly not and why: All other requirements listed in 2 above would be met with the exception of o the 30 min duration of ob for current dir. and speed: Tentative "system" allows 10 min.

- the 30 min duration of ob for current dir, and speed: Tentative "system" allows 10 min, the 50 m Z sampling intensity for salimity and water timp, thru thermocline: Tentative "system" has 100 m increments from 200 to 600 m.

Page 1

mes met and why: Tidal Fluctuation: Uncertainty about ob from buoy unattended for long periods

Total Cloud Amount: Judged berter done by other means Cloud Base and Rawinsonde: Considered beyond 5-year Buoy SOA.

HQC3	4					7				4. 04.4
		7/43/ 75E5/	Tras / 7026/	_				-		
Geo. tocation		00/00						-		
Vertical Jayer	1	SFC SFC							-	
3		0 To 0 to 30 FT 10/0								
Maximum errac	36.178	1 FE 3/10								:
Duration of the		INST INST								
	≻ ×	600/000 600/000							1	
Personal de la company de la c	N	N/N N/N								
	Ė	1/2/ 1/2/ -m								
Ob sync	X.	N. Y OF MIN 10 MIN			F		+			
	7	W/A W//A							+-	

Parameter	Perment 824 Sand (Temp, Press, RH, and	To the second	(Temp)	Press	Base Camp, Press, RM, and Wind)					_					1-
Gee. local im]	8.8					-	<u> </u>	-	-		1		+	+
Vertical Layer		Sex To Sex To					-			+-	-		+		
j	100 To 50 K Pt	Sox Pt SEd									-				1
Maximum errer	20%	20% 554								 					-
Derettes of ab.		L'AST INST							-		ļ				+
1	x. x 600/00 600	100 600 100 1001						-						 	+
14	2 W/A	W/A Signiff											-	-	+ -
L	12/2/	/2 Hrs													+
3	X. Y SOMIA	1 117				-	-			-					+
	2/2	•				+							-		

APPENDIX I, PART C. GENERAL QUESTIONS FOR AGENCY REPRESENTATIVES

General Questions Related to the Refinement of Data Requirements

The attached statements and general questions pertain to problems that arose during the assessment of agencies' requirements for oceanographic and marine meteorological data. These problems need resolution to enable establishment of complete and valid data requirements for use in the development of evolutionary national data buoy systems. Following a review of the accompanying assessment of previously stated data requirements, the agencies are requested to submit coordinated answers to each of the applicable attached general questions.

(In addition to the general questions, specific questions have been prepared for each agency-mission-operation.)

General Questions

- 1. An assessment is being made to determine the duration of observation for each parameter that will be representative for the data use and for the particular type of buoy employed. Present indications are that the time span of representative observations will be either instantaneous (i.e., few secs. or less) or a short period average (i.e., 10 minutes or less). Will this approximation to your stated requirements suffice? If not, please detail duration of observation (time span) acceptable for each parameter and reasons for requirement.
- 2. The maximum allowable errors (acceptable accuracies) for certain parameters, e.g., Current Speed, Wave Height, Wave Period, and Wind Speed, should be expressed as a more stringent accuracy for low values in the range and more relaxed for the higher values of the parameter. For example, in the tentative national characteristics for Current Speed, the potential 5 yr SOA is expressed as 0.03 kts or 1% the appropriate (or greater) value should be applied according to the magnitude of the current speed (0.03 kts accuracy applies to speeds up to 3 kts and 1% applies above 3 kts). Will you please restate your appropriate maximum allowable errors in terms comparable to the listing for the tentative National Data Buoy Parameters and Characteristics for at least Current Speed, Wave Height, Wave Period and Wind Speed?
- 3. As indicated in the tentative data-buoy table, there will be data available for parameters other than those requested. Would any of these additional parameters be of value in the support of this operation or activity? If additional parameters are desired, please state full details of the requirement in the appropriate spaces on the attached form.
- 4. The vertical sampling intensity (z) for the tentatively proposed system incorporates 20 levels from the IAPSO standards down through 5000 meters i.e., 0, 10, 20, 30, 50, 75, 100, 150, (2, 3, 4, 5, 6, 8, 10, 15, 20, 30, 40, 50) x 100 meters. Will this approximation to your stated requirements suffice? If not, please state details of your requirement for each parameter.
- 5. According to some of the stated requirements, there has been some misunder-standing in what is referred to as the synchronization of observations in the horizontal (x, y) and vertical (z). These characteristics are intended to define the allowable time lapse between all observations in the horizontal area of interest of a particular parameter and the corresponding allowable time lapse between all similar observations in a given vertical sensor array. Since some requirements were stated in dimensions (e.g., ft, mi, etc.) other than time, please review the statement of this characteristic with consideration given to the tentatively proposed parameter and characteristics table and make requisite revisions.

- the broad synoptic-scale requirements of the deep ocean (about 500 n. mi spacing) and the finer scale requirements of the continental shelf and/or coastal waters of N. America (about 100 n. mi spacing). These spacings were not intended to be uniform throughout these areas but would be a function of the variability of the parameters of interest. However, the division between scale of the spacing between observations for the coastal water requirements and the really fine (micro-scale) requirements of the near shore and estuary observations has not been as clearly defined. I tentatively planned to deploy the first line of buoys for the medium-scale coastal water requirements in the order of 10 to 25 n. miles out from the shore line. Please state any requirements that deviate from this.
- 7. Different agencies have requested tidal fluctuations, tide height, deep sea tide and tidal variations. Are these parameters the same and thus could be measured by the same instrumentation? If not, please give details of the special requirement and the recommended means for satisfying it.
- 8. In many cases x, y sampling intensity which should be given in nautical miles was stated in "miles." This can cause a misunderstanding of the requirement. Please give this value in nautical miles (e.g., 400 n. mi), it is not now in that form.
- 9. Do requirements for data "to the bottom" imply the need for a recoverable sensor package rigidly attached to some portion of the anchoring system, regardless of ocean depth? If so, give complete requirements for all parameters to be measured at this ocean bottom location.
- 10. If we have missed an area where some difficulty exists between a given requirement and the tentatively proposed capabilities of the data-buoy system would you please identify and state the problem that needs resolution and include a discussion or clarification.

APPENDIX I, PART D. TYPICAL SPECIFIC QUESTIONS FOR AGENCY REPRESENTATIVES

I.D.1 Specific Questions Related to the Refinement of Operational Data Requirements

The attached specific statements and questions arose during the assessment of individual agency-mission-operation (AMO) requirements for oceanographic and marine meteorological data. These questions need answers to enable the establishment of complete and valid data requirements for use in the development of evolutionary national data buoy systems. Following a review of the accompany assessment of the applicable AMO data requirements, the agency is requested to submit coordinated answers for each of the attached questions.

(In addition to these specific questions, general questions have been prepared covering problems associated with many AMOs.)

TYPICAL SPECIFIC OPERATIONAL QUESTIONS FOR AGENCY REPRESENTATIVES

- 1. Is the parameter water pressure (depth) needed only as a reference for the depth at which other oceanographic parameters are measured or as an independent observation? If the latter, please state the detailed characteristics of the requirement.
- 2. The stated requirement for vertical sampling intensity (Z) of 50 meters from the surface to a depth of 1000 meters for the oceanographic parameters will be met only to a depth of 200 meters since the tentative "system" is planning 100 meter increments from 200 meters to 600 meters and then 200 meter increments through 1000 meters. Will this approximation to your stated requirements suffice?
- 3. In view of your entries of "unknown", are the proposed ranges and accuracies for the tentative data-buoy "system" parameters as listed on the top of the assessment sheet adequate for the support of your activity? If not, please state desired values.
- 4. In view of the stated requirement for x, y spacing of 150 n miles for observations in the Deep Ocean, will data from the proposed 500 n mile average grid spacing be of at least limited value?
- 5. What is the greatest depth implied by the vertical layer requirement of surface to near bottom for the oceanographic parameters?
- 6. The ranges of air temperature, dew point, and sound speed are slightly different from the proposed system. Will proposed system values suffice?

- 7. Please clarify duration of observation (6 min.) and time sampling intensity (6 min.) requirements. Does this imply a continuous observation?
- 8. Is 60 minute duration of observation for wind and current an essential requirement or would a representative short period average (e.g., 10 minutes or less) suffice?
- 9. Define in greater detail the current transport requirement. Is this computed from other measurements? Will the current measurement capability of the tentative system be of value?
- 10. Define in greater detail the bottom temperature requirement. Is this intended to be measured only within depths of 625 meters? Does the requirement for bottom temperature imply a sensing device located on the bottom? If not, how close to the bottom is measurement required? (There are practical problems associated with a measurement directly on the bottom and more information is needed. Please give complete details of this requirement.)
- 11. Are these data obtained primarily at other agencies' requests or for your own use? If these data are obtained for the support of other agencies, please explain in detail which agencies and for what use.
- 12. Please state details of required biological and chemical parameters and characteristics.
- 13. Is it essential that the measurement of the geomagnetic field be made at the surface or within 20 meters of surface? Would measurements from a stable platform on the ocean bottom be of value? If not of value in general, would it be of value on the continental shelf?
- What is the required depth of the vertical layer for measuring oceanographic parameters? (Surface to what depth for each parameter?)
- 15. Are the 50 n mile x, y spacing and the 1 hour time sampling intensities essential? Would a spacing of approximately 100 n miles and a 3 hour observing and reporting time be of value in the support of your activities? If not, how far from the coast is the 50 n mile spacing and 1 hour time frequency required (e.g., 50 n miles, 100 n miles)?
- 16. In view of your "no stated data requirements" and the potential of the tentatively proposed data buoy "system" for marine data collection as indicated at the top of the assessment sheet, are there now any marine meteorological or oceanographic data requirements needed for support of any activity in your agency?

1.D.2 Specific Questions Related to the Refinement of Research Data Requirements

The tentatively proposed national data buoy system, having the parametermeasuring capabilities and characteristics listed in the accompanying data requirements assessment sheets, is intended to meet common national data requirements.

Actually, the tentative system satisfies more operational data requirements than
those for research, although the tentative development plans provide for a system
having the flexibility to extend some capabilities to meet a number of research data
requirements. Of course, operational data requirements are generally more easily
met, because, for corresponding parameters, special and temporal research data
requirements are often more stringent and subject to frequent change.

The preliminary technical development plan presented in the 1967 Feasibility Study of National Data Buoy Systems includes funding for a number of special purpose buoys to meet research requirements that exceed the capabilities of the operational data buoy networks.

Agency assistance is requested for the resolution of problem areas arising from the assessment of research requirements that are only partially met or are not met by the tentative operational data buoy networks. Following a review of the accompanying assessment of previously stated research data requirements, the agency is requested to submit answers to each of the applicable attached questions.

Specific Questions for Research Data Requirements

- 1. Can any research data requirements be re-stated to take advantage of the potential capabilities and characteristics of the tentatively proposed operational system?

 Please give details of revised or augmented requirements.
- 2. Which of the stated requirements for measurement of parameters could be net by the tentative data buoy system capabilities by a reduction of grid spacing, a change in position and number of measurements in the vertical, and an increase of temporal apporting? What is the maximum acceptable grid spacing, minimum acceptable number and depths of vertical measurements, and the maximum acceptable reporting period? What area coverage is required (coordinates of region)? How long would the indicated intensity of data collections be required from each specified region?

3. The tentative data buoy system does not include capabilities for measuring many parameters of importance to research, such as chemical properties of ocean water, nutrients, biological variables, magnetic field characteristics, etc. Can the agency recommend instrumentation capable of measuring any of the required (specific) parameters from a data buoy unattended for long periods of time? Give details.

APPENDIX I, PART E. LIST OF INVITED AGENCY DELEGATES

Atomic Energy Commission:

Mr. Stanley S. Seiken Reactor Development & Technology Division Atomic Energy Commission Washington, D.C. 20545

Environmental Science Services Administration:

Dr. Richard E. Hallgren
Director World Weather Systems
Environmental Science Services Administration
Rockville, Maryland 20852

Bureau of Sport Fisheries & Wildlife:

Dr. Lionel A. Walford Director Sandy Hook Marine Laboratory P. O. Box 428 Highlands, New Jersey 07732

Bureau of Commercial Fisheries:

Dr. Julius Rockwell Bureau of Commercial Fisheries 1801 North Moore Street Arlington, Virginia 22209

Maritime Administration:

Mr. Raymond T. Traut Division of Operations Office of Ship Operations Maritime Administration Department of Commerce Washington, D. C. 20235

Federal Water Pollution Control Administration:

Mr. T.A. Wastler Office of Estuarine Studies Federal Water Pollution Control Administration 633 Indiana Avenue, N.W. Washington, D.C. 20242

U.S. Public Health Service:

Captain James L. Verber
Northeast Marine Health
Science Laboratory
South Perry Road
Narragansett, Rhode Island 02882

U.S. Navy:

M. E. Garrison, RALM, USN (Ret.) Op-09B5 Staff Oceanographer of the Navy The Madison Building 732 N. Washington Street Alexandría, Virginia 22314

U.S. Army Corps of Engineers:

Mr. Joseph Caidwell Chief Technical Advisor Coastal Engineering Research Laboratory 5201 Little Falls Road, N.W. Washington, D.C. 20016

U.S. Air Force, Air Weather Service:

Mr. William C. Huyler Department of the Air Force Headquarters Air Weather Service (MAC) Scott Air Force Base, Illinois 62225

Federal Aviation Agency:

Mr. Joseph D. Blatt Associate Administrator for Developments Room 1016, Federal Aviation Agency Washington, D. C. 20553

National Aeronautics & Space Administration:

Dr. J. Robert Porter (SAR)
Program Chief, Earth Resources Survey
Space Applications Programs Office
NASA
Washington, D. C.

Department of State:

Mr. Garret Soulen Science Officer Department of State Washington, D. C. 20520

Bureau of Mines:

Mr. Arthur P. Nelson Research Director Marine Mineral Technology Center United States Bureau of Mines 3150 Paradise Drive Tiburon, California 94920

Smithsonian Institution:

Dr. I. E. Wallen
Office of Oceanography & Limnology
Smithsonian Institution
Washington, D. C. 20560

National Science Foundation:

Dr. Fred D. White Head, Atmospheric Science Section Division of Environmental Sciences N.*ional Science Foundation Washington, D. C. 20550

U.S. Geological Survey:

Dr. Joshus I. Tracey
Deputy Chief
Office of Marine Geology & Hydrology
U.S. Geological Survey
Department of the Interior
Washington, D.C. 20242

APPENDIX I, PART F. LIST OF OBSERVERS INVITED TO DATA REQUIREMENTS REFINEMENT MEETING

I.F.1 List of Invited VIP Observers

Bureau of the Budget:

Mr. Richard Rettig
Budget Examiner
Bureau of the Budget
Executive Office of the President, Room 330-1/2

Commission on Marine Science Engineering and Resources:

Dr. Samual A. Lawrence Executive Director Commission on Marine Science Engineering and Resources Washington, D. C. 20500

National Council on Marine Resources and Engineering Development:

Mr. H.A. Arnold Executive Office of the President National Council on Marine Resources and Engineering Development Washington, D.C. 20500

Federal Council for Science and Technology:

Dr. Charles V. Kidd Executive Secretary Federal Council for Science and Technology Office of Science and Technology Executive Office Building, Room 203 Washington, D. C. 20506

Council of Economic Advisors

Dr. Jack W. Carlson
Staff Economist
Council of Economic Advisors
Executive Office of the President
Washington, D. C. 20506

National Science Foundation - Sea Grant Programs:

Mr. Robert B. Abel Head, Office of Sea Grant Programs 1800 G. Street, N.W. Washington, D.C. 20550

National Security Agency:

Director National Security Agency Attention: R41 (Stenson) Fort George C. Meade Maryland 20755

Scripps Institute of Oceanography:

Mr. James M. Snodgrass Scripps Institute of Oceanography La Jolla, California 92037

Chevron Research Company:

Er. F.C. BlakeSenior Research ScientistP.O. Box 446La Habra, California 90533

I.F.2 List of Invited Organization Observers

Committee on Marine Research, Education, and Facilities:

Dr. Edwin Shykind
Executive Secretary
Committee on Marine Research Education, and Facilities
Building 159 B, Room 476, Washington Navy Yard
Washington, D. C. 20390

Committee on Ocean Exploration and Environmental Services:

Mr. Walter Hahn
Executive Secretary
Committee on Ocean Exploration and Environmental Services
Room 918, Building 5
6010 Executive Building
Rockville, Maryland 20852

DEMAP Study Group:

Mr. John C. Fry
Executive Office of the President
National Council on Marine Resources and Engineering Development
DEMAP Study Group
Washington, D. C. 20509

MARPEP Task Group:

CDR. R. C. Junghans, USN Chairman, MARPEP Task Group Page #1 Building 2001 Wisconsin Avenue, N. W. Washington, D. C. 20235

Interdepartmental Committee for Atmospharia buigness (ICAS):

CAPT. Sherman K. Betts, USN (Ret)
Executive Secretary
Interdepartmental Committee for Atmospheric Sciences
Room 5849, Department of Commerce
Washington, D. C. 20230

Interdepartmental Committee for Meteorological Services (ICMS):

Mr. C.E. Roache Chairman Interdepartmental Committee for Meteorological Services Page #1 Building 2001 Wisconsin Avenue Washington, D.C. 20235

Interdepartmental Committee for Applied Meteorological Research (ICAMR):

Mr. Clayton E. Jensen Chairman Interdepartmental Committee for Applied Meteorological Research Room 348, Page #1 Building 2001 Wisconsin Avenue Washington, D. C. 20235

National Academy of Sciences Committee on Oceanography (NASCO):

Dr. John C. Calhoun Jr.
National Academy of Sciences
Committee on Oceanography
2101 Constitution Avenue
Washington, D. C. 20418

National Academy of Engineering, Committee on Ocean Engineering:

Dr. Russell Keim
Executive Secretary
Committee on Ocean Engineering
National Academy of Engineering
2101 Constitution Avenue
Washington, D. C. 20418

National Security Industrial Association, OSTAC:

CDR. John H. Jorgenson USN (Ret) Committee Executive, OSTAC National Security Industrial Association Suite 800 1107-19th Street, N.W. Washington, D.C. 20036

National Oceanographic Data Center:

Dr. Thomas S. Austin Director National Oceanographic Data Center Washington, D. C. 20390

National Science Foundation, Biological & Medical Sciences:

Dr. Harve J. Carlson Division Director Biological and Medical Sciences National Science Foundation 1800 G Street, N.W. Washington, D.C. 20560

Bureau of Commercial Fisheries:

Mr. Glenn A. Flittner Bureau of Commercial Fisheries Box 271 La Jolla, California

U.S. Air Force - Air Proving Ground Center - Eglin AFB:

COL. Brant Walker
Air Proving Ground Center (APGC)
Once of the Staff Meteorologist
Eglin Air Force Base
Florida 32542

Hurricane Research Laboratory:

Mr. Robert C. Gentry
Director Hurricane Research Laboratory
Miami, Florida

Atomic Energy Commission - Environmental Science Branch - Division of Biology & Medicine:

Mr. Arnold Joseph
Marine Scientist
Environmental Science Branch
Division of Biology & Medicine
U. S. Atomic Energy Commission
Washington, D. C. 20545

U.S. Arms Control and Disarmament Agency:

Dr. Herbert Scoville Assistant Director U.S. Arms Control and Disarmament Agency Washington, D.C.

Department of Health Education and Welfare - Water Supply and Sea Resources Program:

Chief, Water Supply & Sea Resources Program
National Center for Urban and Industrial Health
U.S. Department of Health, Education and Welfare
6935 Wisconsin Avenue
Chevy Chase, Maryland 20015

APPENDIX I, PART G. ATTENDEES AT DATA REQUIREMENTS REFINEMENT CONFERENCE 19 MARCH 1968, WASHINGTON, D. C.

- 1. C.J. Glass U.S. Coast Guard, DBP
- 2. CDR. V.W. Rinehart, U.S. Coast Guard, DBP
- 3. RADM O.R. Smeder U.S. Coast Guard, DBP
- 4. CAPT. J.A. Hodgman U.S. Coast Guard, DBP
- 5. A. White U.S. Coast Guard
- 6. FNS V. L. Whitcomb U.S. Coast Guard Oceanographic Unit
- 7. J. E. Wesler U.S. Coast Guard, DBP
- 8. P.S. Branson U.S. Coast Guard, RET
- 9. J. W. McGary U.S. Coast Guard Oceanographic Unit
- 10. Eugene J. Aubert The Travelers Research Center, Inc.
- 11. G. M. Northrop The Travelers Research Center, Inc.
- 12. L. H. Clem The Travelers Research Center, Inc.
- 13. J. P. Pandolfo The Travelers Research Center, Inc.
- 14. Peter Mellinger U.S. Atomic Energy Commission
- 15. V. Palmer Maritime Administration
- 16. Ben King Duffy Committee on Marine Research, Education and Facilities
- 17. Clayton E. Jensen Office of Federal Coordinator for Meteorology
- 18. Sidney Marcus National Oceanographic Data Center
- 19. A. R. Picciolo National Oceanographic Data Center
- 20. Robert H. Martin Naval Weather Service Command
- 21. CDR. R. C. Hunghans Chairman, Task Group MARPEP, (Naval Weather Service Command)
- 22. R. P. Cook Naval Air Systems Command AIRS40

- 23. D. M. Hanson MARPEP (ESSA)
- 24. Leonard Bosin ESSA WB Systems Engineer Member, MARPEP Task Group
- 25. R. E. Moses ESSA
- 26. W.O. Davis ESSA
- 27. R. E. Hallgren ESSA
- 28. R. F. Hill Institute of Ocean Technology, University of Rhode Island
- 29. R.A. Rettig Bureau of the Budget
- 30. John Roche Office of Research & Development, Maritime Administration
- 31. Frank V. Melewicz Systems Research & Development Service, Federal Aviation Administration
- 32. Robert A. Baltzer Water Resources Division, U.S. Geological Survey
- 33. Hugh McLellan National Science Foundation
- 34. Fred D. White National Science Foundation
- 35. Clifford J. Murino National Science Foundation
- 36. E. F. Corcoran National Science Foundation
- 37. M. E. Garrison Office of the Oceanographer, U.S. Navy
- 38. LT N.T. Monney Hq Naval Material Command (MAT 0327)
- 39. H.V. French NAVOCEANO
- 40. C.H. Cline NAVOCEANO
- 41. J. Osborn DOT
- 42. C. Osterberg AEC
- 43. Robert Wicklund Sandy Hook Marine Lab
- 44. George Nonnemaker MITRE CORP., Bedford, Mass.
- 45. A. Fred Feyling Geodyne Corp., representing Instrumentation Panel, Committee on Ocean Engineering, National Academy of Engineering

- 46. Robert G. Walden Woods Hole Oceanographic Institution
- 47. Sherman W. Betts I.C.A.S.
- 48. James M. Snod grass Scripps Institution of Oceanography
- 49. R. A. Schwartzlose Scripps Institution of Oceanography
- 50. I.E. Wallen Smithsonian Institution
- 51. W. Aron Smithsonian Institution
- 52. W.C. Huyler U.S. Air Force, AWS
- 53. E. V. von Gohren U.S. Air Force, AWS
- 54. B. F. Walker U.S. Air Force, AFSC
- 55. F.D. Jennings ONR
- 56. F.G. Blake Chevron Research Company
- 57. R. W. Farwell Ordnance Research Laboratory, Pennsylvania State University
- 58. J. L. Verber DHEW/PHS
- 59. T. A. Wastler USDI/FWPCA
- 60. John Craven Chairman, Panel on Ocean Engineering, Committee on Marine Research, Education and Facilities
- 61. A. T. Pruter Bureau of Commercial Fisheries
- 62. Julius Rockweil Jr. Bureau of Commercial Fisheries
- 63. John Fry Marine Science Council
- 64. H.A. Arnold Marine Science Council
- 65. Henry Rugo MITRE Corp. Bedford, Mass.

APPENDIX II COMPARATIVE TABULATIONS OF 1968 REFINED DATA REQUIREMENTS

TABLE II.A. COMPARATIVE TABULATIONS OF REFINED OPERATIONAL DATA REQUIREMENT

1		al Location	Mark or a	at Spacing	Y		Γ.	i	Ţ -			:		200	
A.M.	Constal N A	Deep Ores	i N4	()x)	Laver	Sampling Jointein	} Duration ut abservation	Time Samping Intensits	a) ac n	al Obe	i Herist Jodination Lightration		•	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	معاه او در اعم
	(,54)	1200	-		e tom e postole allegations		-	The same recommendation	en versea		W0001275000	-	$\leq \mathbb{Z}$	iencze	
٠		6 recovery					Inet	1.000 50	1			1 1		- 1	
SAF		areas 480 n m:	1	2:8"	86	* *	5 .n	in sper	i in min	* *	with		- x - }		
345		dum & 2 juner rech june		n ma	ĺ	:	1	Shrenut Inuser			Chake	! !			
		THE A LIMES			<u> </u>			1111111111111			-	++			
2	NE Gelf		5 pts		S4c to	(A PSK)	10 mun **	Libra	பிரைம்	. min	nnt h				` , '
SAF AMS:	of Mexado & 3 buosa 1		ison mai		bestumm.	(evela	1	1			ት ነበ - የቋልቱ	,	7 8	F 4GR III	1
1.3	mi offsnore				Sic	A (t aged	10 min	Varies.	: :i0 min	58.4				rg AFE	. :
1	srum Sandenberg	AFB	1			12 ft		a speri	iv min	:				1 1 2 7 1 1	` ;
		·	·	100 to	•	•	-			, , •	Cont				+
SAFIAWE		Gradia	1	க்⊗மா க வ	54	N A	inet	12 hrs	34) 1 is				۲.		•
*14	Wrat	Pac Const	160 10	20 to	Sie to 100 m	LA Sievels	, u main				(378	r+	+		
PH 's	Custat	to (ce W 1015	170 p. mg	600 mm	itranag:	& bottom:	int wast:	are	30 min	Similar		-			
مزادشان	140'%	to Aiaska	1		(Sake to ; ≰∕ிரை	to Sou m	1910 miles			,			1		
019	Wret	Pac Const	160 10	740 to *	State to	LA POLICE TO	1 12 mm	†	•		: and		*******		
PLC F	Cost of	to 160° F 10°5	240 n.m.	600 a m:	• 115 m	4 5 m	1	6 hre	30 m.n	5 m		•	, ;		•
Wisan DC		to tuesks	i			from bottom	i	ĺ		:		1 :		. :	
, ; ,	(16) H 41	161 C . 07 and	5.	N (Ste to	iAh Levela	•			-			+	+	
1. 19A. t.	541N 511W	Y in Atl and	i pti		5000 m	A = 50 m	min	6 krs	Maraha	30 min				. .	4 1
. #5 ₹		"N V" in Pas	L.	·		fram tottom	1	<u> </u>						1	
*24	Timeka in Att	5 tracks in Atl	2 4 744 14 641	1 1 As a	Ste so	LA PSA - P - FIS	1	N 818			Cont			_	
(9 C) .	1 tracks in Pac	6 trucks in Pac	0 25 -	and 4 John and	5000	& sear	10 min		34° m₁л	30 min	!		x :	ı ;	4 : 1
Bld Sect			from whom 25]	bottom		M m.			1		ì	. i	
75	Grand Bank	•	pts near	6 5 50	54 : to	LA PSA! jevels *	10 /	* PC* 3	•	*	1 11				
(9 k)	39 'N to 51		4418		5000 m		3 neum	レンニー	10 mate	1 mu			•		* .
ke Patrol	421% L. 331	•	and the second	k 25 3 25 k = 190 a ama		(Clar ar efc)		H ME.		:)		į	1	i
• • • • • • • • • • • • • • • • • • • •	Chines a ree		Var		i séc to	LAPPET		No	•		leter				
ER'S SAR	Configurate)		• 04		5000 m	iereis	10 motor	w oper	k) seria	30 mass	In 1556 at		1		• • •
*25	Compt Sharii	W Ati to	Lives at	10 .40	Ste to	IAPBA- levela	.0 20/18	6 hrs	i de ses se	E: 13		1			
C S CU	JE (5	20-8 E Pa	16 20 38	La liama	700 ac	3000							44.		
Orman	A SHEET CHARGES	N of 13 8,	5-0 *0 & 1040	100-500	ĺ	Destable in	Cass for	1	. A main	Arm t	Cossi	1	1	1 :	
Services .		Karishio Current	(me : Ou	N Bal	Ste w	عطانوهات	spec us	4 arm	lane:	for		-00	. '		1
			P mai appart	a pacit	Soules to	7 30	ара	<u> </u>	6,000	454	: •	1			
• 76		Aretic	1	:0	±rω •	LA PMAT LEVELS	•	1			Liment		,		1
UMCG APP	į	a sud	!	to 11	1000 m	& mes.	(० करा	5 hrv	. W AM	. № с в.см		1	•		* : 1
H CASTINE		America	<u>.</u>	3 MJ	.	DOSTORM	L	<u></u>		·	<u> </u>			+-+	
130.35	N.A. Contest	i	60 to	1 40 to	Sector	Lt PMI reels	ج عصر	CNA Thre	₩ mix	3 Mars	\ compl		• 1	•	3 . 1
EMBA :	onet to	Giotai	150	590	3 000 m	& near	about t	this 6 hea		3 PM-781			•	•	•
	190 A 361	<u></u>	ļ• <u>-</u> "	-	<u></u>	bosticus	the rule	Ara.	<u> </u>	•	}	-	د پدرستیم		
#3 #	Estartos à	ŧ	: (0 m .m.)	Ţ	Merchanis I m	i m imbrivela "	last)	3 510	1.85	S min	T THAT		_ ,]		= 1
FW PC 4	ment about	1	10	į		2 19, 70 40 54.	***	1	•		:	1	* *	R C DEC	***
	Great Labes	!	IT IS Short	}	Mic Junt 18 m	190 m	Beia i Ni	2 34 4	1.15	. Januar	í	1 ."	rest,	-	
		-	+	 	÷				<u> </u>	<u> </u>	<u> </u>	₩-		F }	
fer No. 11	[* Has depths		-	Mar tes		La.et	i des	<u>.</u>	٠	Cent		:	•	
ter¥ir Camadhar 838	Į.	icoma Mi Ante. S.A. Air Ku Antri		perate	mas (100 m) × A	Tille	ser ete	1 5 A	ж. ч	i.	1		1	
		<u> </u>	÷	L	<u> </u>	<u> </u>		<u> </u>		-	·	+	ہ ــــــــــــــــــــــــــــــــــــ		
/=	park struc	If the M. Mart W.	, , , , , ,	: F x . M.	M- W	Varue	- Items	Ì		3 10 5	Cope	1			ì
Maria Copier Ma	: 321% (141%	transport	agaict wat		hothes mail is	denoci tos:	CAFT *	مند و	0.36	- No. 10		i •			• .
	-	./ 7 / 7	: 20 4 With		300c n	ther:		:	:		1	1	:	1	1
	<u> </u>	 	+				. 10 - 10	4 50.	* 4	*	 Cou	+	jane eng	.	+-
	ì	i (itan)	ł	200 21	veler proce	Comp.	(317	CAFF SAME		CHEST		1	. 1		4 : 1
	1		Ì	1 Taber	-		16 m.u.		18 =	1 772	:		:	: :	;
) T (1	1		106 20	Me to 1	1 k m 40 t 2 t	1 () m.u	<u> </u>	<u> </u>		بالمنظمة المنظمة المنظ المنظمة المنظمة	1	⊁• ¬• [
rii Qualinuus	1	(itaba)	1	45° a 36;	100 F G 100	10 18 k 3 k to	1,17 = 0	e bre	h.	1 20	-			1 1	1
g (ngaintain) Calair (na main	1		:		winds also	1401.7			1			1	;	, ;	1
	1	<u> </u>			## Se	SA PSE	lest	0 13	•			†	·		
*** ()	1	Circles) (00 to 20.	hellings	Several	: 10.00 : 10.00		i iv man	1 * 4	· •				• ! •
715 LISH					201) 5000 m		- 4 - 10	1		1	:	i		1 1	4
rry (1891 Interior Sic & Budgeto	}	į			,	1									
WOC: St. Substit			F. cta-	<u> </u>	<u></u>			•	·			†	.		
WOG W	Pl. Muga 21:30 -Jan 18 H	MAIN Yes Phain	Tartes generalis	↓		LA PRET Jessie	leaf Topics	3 6			C etc.	1.		•	•

D OF	ERATI	ONA	L D	ATA R	EQ	UI	RE	M	E N	TS	}			FA حر	RA MI	FT11	RQ1	75 B	E 53	MET	BY I	3000	,		ر	1	? F		ITEN KAL			45	1TF NOS	
Duration. of	Time Sampling intensity	Bynch X. y	of Obs	Perion of Operation		- イ ン サ	Myel	511.X	See d	See !	VI DO	M. IN	irn e	Property of	6.2. 1 15. 16. 16. 16. 16. 16. 16. 16. 16. 16. 16	er i	KIE Y		1 6 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ight.	A TOP LOS		N. C.	Y X		Nos.		Se Y	Man A	11:		MA TOP	 	_
	i to 5 head in oper 6 hr= not in oper.	10 agan	N.A.	Cont with breaks	*	,		,						,		ı			•	1														
- 10 nein ^e	1	10 min	1 min	Comt with breaks		r od M			٠	•	•	•	1	ı	•	,	•	•	•	•				٠										
: 10 min	Varies w oper	10 min	L		Van	tente	18 A	FB				ļ + -		٠		 	•			•						 								
inst	12 hrs	30 min	N A	<u> </u>	ļ	*		, x					1	x		x										_	_	_						
int wad:	A hrs	30 mia	. anin	Coct	*	x		X				x		r						.														
10 min ^w	c hrs	io men	5 min	Cont	•	i i		1									}								5	ļ		-						
10 min	6 hrs	30 min	30 min	Cost	*	×	×.	*	,	•	ì		,	,		1	•			1	x.							,						
) 0 m.in	h hra Monthly	30 min	30 min	Cont	,		x	,	1				,	x		*	e			х.	,					- +								
10 min	b:-*eekiy	10 min	1 mm	Cont Feb - Juli	x	`		,		6	} 	<u> </u>	,	×		2.	•	•	٠			-						1						
e min	Values w oper	30 min	20 min		,	2	,	X.	x			-	- -	 		x				×							1	1						
. 10 mm	6 hrs	10 min	1 mir			X NA)	1	X	*	•		•	1	,		`	a	•	•	1	*	•	e			1		`						
Contfor special opa	5 hre	Inst	imain for .ops	Cont		l Or •	2		X					į×		x				,			•											
10 min	6 hrs	30 mia	30 min	Cont.	,		x		,	•		•	`	*		,				1	,				x			x						
Inst or	CNA -a IX) 6 hrs	30 min	min	Cotat.	h X	*	•	X X		(CN	5	<u> </u>	n x	X 3	 	•	1 1		•	X				 		-	-	-						
net, 5 min , 10	3 hr.	i hr	5 min	Cont		61.	 	× 100		•		•						*		,		*					•			-				
min, 1 hi	3 tyre	1 hr	io min		•	rest	,			•		•	_	•				•		,	*	1					•							
Inac Tide cont) obs. per sile	N:A	N/A	Cont					.																	*			İ					
inst purr = 62 min	5 min	imjn	3 to 5	Cost.	*		R		×																7	,								
io min Bomin	6 hre curr +3 hre	N/A currs 10 min	N/A curr 3 min	Cont		x	1	*			*		*	I.			x							•					k		*			
ld min	6 hrs	l hr	l hr	Cost																X.											n			
mat mt. wnd 10 min	6, 12 hre	iO mia	N/A	Cost.	×		*	×	×		,	^		×		x	*	×		*											x			
ant rave - 10 min	J, 6 hro	10 min	l min	Cond with breaks	,	,	1	,	<u> </u>	-	<u> </u>		•	,		ı.	*			•			†											

land a s

B

TABLE II.B. COMPARATIVE TABULATIONS OF REFINED RESEARCH DATA REQUIREMENTS

REQUIREMENT CHARACTERISTICS Geographical Location Horizontal Spacing Duration Vertical Vertical Period Brnch, of Obs Constal N A i)eep Ocean Sampling Sampling Observation Intensity AMO: (CNA) intensity Operation Cosatal N. A. Coastal N/A cireat Caliba **X**c ≤ 10 min 6 hrs 5 min depth it 125 m depth 2 (20 m n mi n. m. 10 n. nil near shore Culf of Caribbean Me to IAP8O levela BCF-Mexico and near bot £ 125, 175 > 10 min 6 bre 30 min 30 min 250 and Galveston Ceribbean IT: EX 100 n. mi deep water **2000** 1 1200 m Gulf of #c to IAPSO 10 min 12 24 hrs Trop Atlantic 500 n mi 500 a mi Me xico 3. 6 hrs Miami 20 N-20 S (Special areas) 19 to 30 n. m •10 100 (APSO 1 to Cont. abelf Mc to out to 200m 5 anin 3 hrs 10 min i mis 200 m Beaufort Maine to Texas • i i Estuaries & ne: PCFshore areas Caps Varies #fc to Vertes 1 10 Cont. 10 min) mir Beaufort Cod to Texas bottom w-area o max 200 m interest 60 to Жc Mc-30 m •12 W. Coast 42"S W. Coust 5 to BCFto 160°E. 12 ars Cont 12 hrs 5000 m Seattle 400 s. mt from 40°N to (Spec. areas ievels 10 m-bot Bering Sea (5 n. m *****23 West W. Const 60 to 100 n. mi 5 10 min 3/6 hrs 100 to 300 Variee Sec to in lines - 600 n. mi ACF-Const to 180° and n. znim 900 m & 7 to 25 6 hr avg Cont. for min to Cont. 1 min 30 min N of 2018 Stanford levela for curr. curr. I (ne s pottom spart - 600 n. mi MDRT: 40%-45%, 84W (**%**c) 100 BC F--74 W on shelf to 300 a. mi 200 m 1APS0 - 10 min Cont. 3 hrs 10 min) min No deep water (Sub-sic) Woods 30 to Hole or Golf Stream 100 n m •1£ Guif of 25 to 30 IA PRO BCF-SEC to leve a L a. mi or at 20 days Maire 3 hrs 10 min 1 min Booth Bay br4tom 5 an (rom 3 buove bottom Harbor time Gulf of IAPRO BCF-Maine N to Mc to lovels & 5 10 min Cont 10 min 15 n. mi Sooth Bay 5 m from onshore Harbor bottom e 14 Cont. shelf 10 to Sic & BC F-≤ 10 min 19 mia i min Washington D. C. to Maine contours - 20 End of £a. 5 m to 5 min it Apr. BSFout fr a coust Ne to 39 m then Georges ≤ 10 min special special Nov 1 min Bank to Florida Kevs 100 n. mi apart spacing in lines Sandy IAPSO levels Are as ends Hook to bottom 3 hra 10 min out to 150 m s . 2, 5, 10, 26, 21/69 30, 50 n m! from coastdepth : 26 Grand Banks Baffin Bay 30 to 30 to Sic to JAPSCI icvels 5 10 min Internet 1'9CG-.00 n. mi Labrador Sea 4 30 min longest 6 hrs 10 min เสนา Stratt intena MYE. spec period 30 days Patrol near surfac APESI +31, 32, 36, 37 Constal 300 to IAPS() Near ES8A 150 n mi 600 n m1 but move loc N America Giobal levels 1 Inst. N/R 5 min (only specific areas)
(at one time botton 25 to 50 Coti. & Est. & 2 IAPN +40 buova in area Sic to HEW at 40°30' N=40°15' N and 73°40' W= n. mi - 50 leveis - 10 min 3 hre not 10 min i min 72"55"W & 38"30"N-39"00"N an n. m! from 74"30"W-75"00"W started

AMO's 21 and 22 had not submitted refinement material as of the date of this report



^{*}Varies with parameter

Denotes a change or an addition

nts							_	ا _ــــــــــــــــــــــــــــــــــــ	_				 ,	н но							-						T	P ECHN	OTEN ICAL	TtA 1 PRO	81.E1	45		ETTER		
	Period of Operation			CVI	Selin.	e lix	0 1E	ed (4)	mper s	ature orre	re hie	nt nut	ave n	e is ut	SHOOF	in is	16.51 16.51	orre	15. 15. 15. 15. 15. 15. 15. 15. 15. 15.	leine Malir	12.8	3180	* 81	3.4	alor.	dicho	Se dir	en de	ale Desil	itusi)	S. C.	Tout cle	-		7	
N/A	Cont.		0			•	ı				,	- 1	•				-													82	8	100				
30 mis	Cont.			*		x				1	,				,	, ,		-	+-	-i-			+		+	+	+	+	-		x					
) min	Cont	-	i	X X		1	ļ	+-		-						*	+	,	+	×	i	+		+	-		1	-	-	+	+					
1 min	Cont.	Ţ,		X.		*		•		•	•		•				-	,		я		1	-	+-		-	+		-	-	+					
l min	Cont 4 mo yr	*		×		ä		•		•	•	6								*		-				-										
l min	Cont.	, x		*		x	x	6		•				+	_	7		x	+		+-				-											
l min	Cont.	•	,			×	x	•		,	×	•		•) x		•		x			•	- -	-	-	•	•			•					
l min	Cont.	x	,			x		x		x							-	x		x			***************************************		-					-						
1 min	Cont. 20 days at a time	,	*			X		•		*	×	*		,	×	•	1	×	-	x					-		x				x					
1 oun	Cont	x				x					*	x			×	•	,	я		×						-	H				x					
1 min	Cont	,				×	-			†							 	x			-	 							 							
1 min	Apr Nov. enda U-69	λ	×			x												x																		
1 min	Introct longest period 30 days	×	х	×		x	*	•			×	x		*	•	•	•												x							
3 min	Cont. but move loc. em. 30 days	x	x			×																					•									
1 min	Cont not vel started	*	*			×	•	•		•	•	•		•	•	•	•	•	•	•	•	•		•	•	•	*	•	•	9	•					

B

TABLE II.B. (Continued). COMPARATIVE TABULATIONS OF REFINED RESEARCH DATA REQUIRE

REQUIREMENT CHARACTERISTICS

				REQUIRE	EMENT CHARAC	CTERISTICS						-	
A Selv	Geographical Constal N A (CNA)	il Location Deep Ocean (DO)	Horizonia.	Al Specing	Vertical Laver	Vertical Sampling intensity	Duration of observation	Time Sampling Intensity	Syncu. o	us circ	Period of Operation	/	المحرا
NSF- Duke U	Con Slow Bay S. Car. 16 100 n. mi cut in Gulf Stream		A line of fue 10 25, 50, 7 200 m & 1 is n. mi on etti	75, 100 & b⊯oy 30 ther	Secto e bottoen max 200 m	0, 20, 20, 35, 46 50 m then IAPBG levels	1 min	12 hrs	10 min	10 m/n	Cont with intermittent breaks	T	
#47 NSF- E of Miam)	F'orida • Swraits off Birnini Bahamas and Miami		side of line Special poin " 3 and " n from source source	nte gni	Sic to bottom max 800 m	25, 50, 100 150, 200 & each 150 m to bottom	Institution in 1 min. avg.	Not stated	5 mus) min	Cont	, x	+
€35 OKR- NYU	East Coast & Gulf Stream	World Oceans	20 n min atrong curr 200 to 300 n elsewhere	r	Sir to bottom max 5000 m	8fc, 590, 1000, 1500, 2000 3600, 4000 & 5000 m	20 min avg.	6 hra	10 min) min	Cont. not vet started	x	,
45T ONR- NYU	East Coast & Gulf Stream	World Oceana	20 n. mi in atrong curr 200 to 300 n elsewhere	т.	• 20 m to - 1000 m	- 5, 10, 20 m (AP9c) levels to 1000 m	20 min avg.	6 hrs	10 min	1 min	Cont. not yet started	,	
AGN MARA Wicksia Mole	Seet Coast Not 0215 First 07W and to 015 Not Sice 6015	2019 to 4019. 651W to 751W & Global incontage of opportunity	6 n. mi in G Stream 20 n. mi out Gulf Stream	≀tanderof	Str ● iω 5000 m	IAP80 levels OK in some areas should be flexible for other areas	inat to 10 min	1 hr	16 min	1 min	Cont	,	
#62 Smith- sonian Institute	Not stated	Not stated	10 n mt	10 n. mi	Sie to 280 π	3, 65-130. 190 & 280 m	Hot stated	48 hrs	Not stated	Not stated	2 vrs not vet started	,	(R
976 ORL- Pont 50	Gulf Stream	World (Aceans	300 n mi	300 n mf	Sfc 6 to 5000 m	IAP8G levels	2 min	6 hra	10 min	1 min	Cont.	١.	
e77 ORL- Penn St.	Key West area Gulf Stream (Small selected area	World • Oceans eas of)	5 5 n mi 3 or 4 huce it a line in cac area		88c ● to 5000 m	20 levels densor near top	inst waves	l min	1 min	l min	Cont	†	
#79 USN- Mar Eng Lah	Eskt Coast & Caribbean (World wide in	C crithe an	t pt at a time	l pf at a time	Bottoni si 16 m ahs hottom max depth	Bottom 1.5 0.5, 6, 9 & 16 m above bottom	i man	30 min	N A	1 min	Cont w hreaks 1 vr in area	×	•

Varies with parameter



^{*}Varies with parameter

Denotes a change or an addition

i.e. increases a change or an addition.
 AMU's 4n 49 52 59 65, 66, and 70 had not submitted refinement material as of the date of this report.

OF I	REFINED	RESE	ARCH	DAT	'A REQU	IRF	M	ŒI /	NT:	s 7	PAI	UME	TER	ROTI	5. ве	RT M	y-		YOU	8	7	7	\rightarrow	7			ENTIA L PRO	OBLE	ME BY NON
.	Duration	T:m-e	Synch. of	(Sha).	Period		/ S S S S S S S S S S						3/		Se la								* /	/	4				
ul ng tv	of observation	äumpling intensity	τ. γ	,	of Operation	Ø					\ 3								**************************************	\$	8	# /3 /3		1	A L		8/2		•/
30, 46	l min	12 hrs	10 min	10 การๆ	Cont with intermittent breaks	R	*		х.											6		×			2				
iú Is each	inst. to 1 min, avg.	Not stated	5 mun	1 min	Cont	,			x			1	1							X					x				
1000 0 \$ &	9 20 min avg.	ā brs	16 m)n	1 0	Cont not vet attirted	ţ	х	*	я			*										×							
10 m	● 20 min avg.	6 hra	10 min	l min	Cont not vet started	7	K		R					×		д	¥	х		×		*				•			
rela he huld be or	inst to 10 min	l br	10 min	1 min	Cont		R		•	х						×				×									
). П	Not atated	48 bes	Not auxled	Not stated	2 ves not vet started	(1	de qu	Dera)	Fore	mote:	5 M/10	Созы	dere	d Be	ond I	Fire 1	Tear	SOA	, 										
	2 min	6 hrw	10 7:10	' min	Cont	,	¥	я	x	•	×	9	, x	n		×	×	•	h	,	•	-		•					
a r	inst & waves	1 min	l mia	1 min	Cont	7	X	x	×	•	×	æ /2	X	Z		*	X	6	×	×									
5	l miñ	3º min	N A	1 min	Cont w hreaks 1 vr in area	`	×		я		*		•									×					×		

B

TABLE II.B. (Continued). COMPARATIVE TABULATIONS OF REFINED RESEARCH DATA REQUIREMEN

REQUIREMENT CHARACTERISTICS Brack, of Obs Duration vi Observatio Vertical Vertical Time Period A MO Coastal N. A (CNA) Deep Oceas (DO) Sampling Intensity Sampling Operatio Copt. Ball & 4 Janeary USN-Mar Eng. Lab. insper water within telemetry in a eq. 20 n. mi epart **M**c not yet started distance of land Anywhere in N. Atlantic or Pacific where seastate of 4 to 198 to 600 n. m1 196 to 600 n. zo! inter-mittent USN-NSR & DC N/A 30 min N/A 4 hrs N/A 5 is observed 20"N to 60"N and 110"W to # 84 ONR-Calif. ourr. 22.5 % to 500 n. sai IAPSO to Court. nnds 1974 1 hr 10 min 1 min Scripps institute of Columbia e mi 130°E Oceano. # 85 Pacific Ocean 8/c to 10,600 m - 3 m off the bottom primarily doep curr AEC-Unik Scrippe + 68 1 to 4 er so - 50 levels buoya in a 10 x 10 from 7 to 70 m part Cont. ends Peb. 71 to 10 io mia from San Diego maz deptê 780 m min n. na isq. 0° to 30°N & 150°W to 130°E & 35°W to NA, 30°N to 45°N & 15°W to 40°E. 12 hrs 30-60 s. mi 3 hrs, 0,1 n. mi 2 hrs 200 to 500 n, m! all areas, 30 to 67 n, m! é 89 Gulf of UBN-MAVAIR-Gulf of Mexico and N. A. Coast out to 150 n. mi from 15°N to 60° wind 10 min if > 20 ksota 810 to 500 m grid in spec, loc., for curr & w temp, a 30 to 100 & 0 7 n, mi lev. I 10 min Cont. SYNCOM Antarctic 60% grid to open ion to 8. Pole # 94 BCF-Pacific Ocean 0° to 35°N & 130°W to 180° 60 n. mi IAPBO levela in curr. 500 to 800 but denser 34 hrs 10 min 1 mie Henolulu in thei. Cont n. mi elsewhere Varies - 50 to 300 n. mi Varies - 300 to 1000 n. mi 0, 50, 100, 200 300 m then unk Estuaries & Cont. 50°N W Sic to Not ace-Alaska shelf of Alaska .

^{*}Varies with parameter

⁹ Denotes a change or an addition.
AMO's 81, 86, 87, 92, 93, 94 and 97 had not submitted refinement makeria; 2s of the date of this report.

RI	EFINE	RESE.	ARCH	DATA	A REQ	UII	RE	MI	EN J	TS				PA RA	NE.	TERI	K(TR	8£	8T M	ET E	Y BI	JOYS	 			TECH		TENY AL F	TAL PROBLEMA	BETTER MET BY NON-BUOY
	Duration	Time	Byrach.	of Obe.	Period		/	Bisen	*/	A LUT S	A RIP	250 T		1		, ste	200	e de la companya de l	eries	A SANCE					(Vale)	35 KB)				
	of Observation	Sempling Intensity	X. V	1	of Operation	0	STOR	inder	SE SE		age of	Bulley	**************************************	ASS.	7. 0	A SOL	30	COS CO		gasti'	re di		270°	889 84 84	27.	\$ (9)		14. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
	lnat	Const.	Milli- second	N A	Cont. not vei started															e de la companya de l			X							
	30 min	4 hrs	N/A	N A	inter- mittent									×											·					
	Inst to Cont.	i br	10 min	i min	Cont. ende 1974	x	•		¥	•	·		•	•	¥		¥	*	I	O	X	•		•	•	•	•	-		
	Inet	l hr	1 min	Unk	Cont	7																								
	inst to 10 min	4 hre	N/A	10 min	Cont ends Feb. 71	x			R			×		X							X									
	inst wind 10 min if > 20 knots	12 hrs 30-40 n. ml 3 hrs. 0 in. mi 2 hrs	30 min 10 min 30 sec	30 sec	Cont.	ж			×					я	¥		7	x	R		я									
	≤ 10 min	34 hrs	10 min	1 min	Cont.	•	•		•		•		•																	
•	Not stated	Not stated	Not stated	Noc stated	Cont	•	•		•						•		٠				•									

B

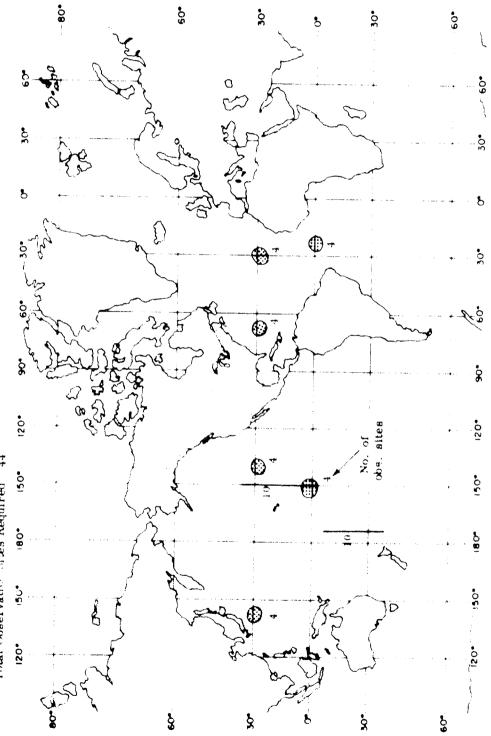
APPENDIX III

CHARTS SHOURG GEOGRAPHICAL AREAS OF INTEREST FROM WHICH DATA ARE REQUIRED FOR INDIVIDUAL AMOS

APPENDIX III, PART A. GEOGRAPHICAL AREAS AND REQUIRED NUMPUA OF OBSERVATION SITES FOR OPERATIONAL AMOS

486 n. mi-Diameter Plus 2 Lunar Recovery Lines Area = 3 Atlantic and 3 Pacific Records Areas in Pacific

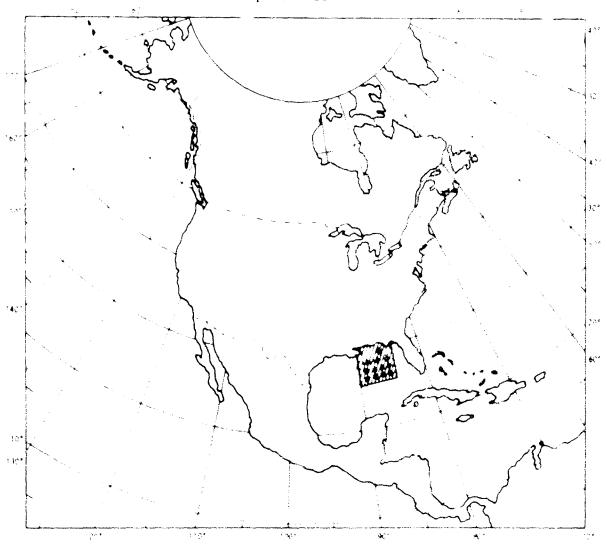
X, Y Spacing - 200 n. ma. Total Observation Sucs Required : 44



AMO #1-USAF (AWS)-Support for recirery of aerospace vehicles.

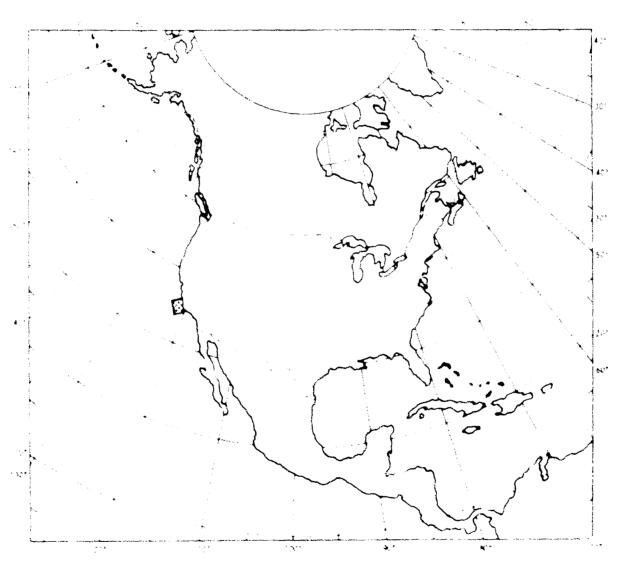
Legend-

- Area : Northern Gulf of Mexico from the Coast S to $25^9 \rm N$ and $90^9 \, \rm S$ to $84^9 \rm W$
- $\tau=X_0$ Y Spacing = 5 Specified Points and 150 n. mi. in Rest of Area
- Total Observation Sites Required = 12



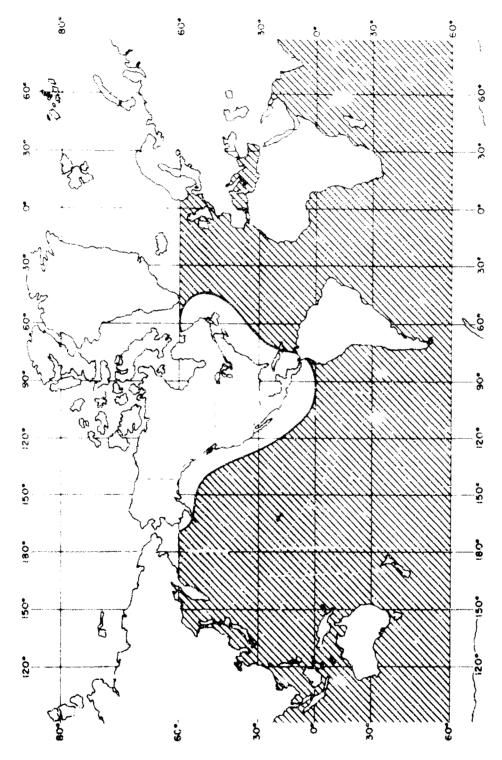
AMO #2A-USAF (AWS)-Support National Defense Weapons and liteties RDT & E at Eglin AFB.

- Area 3 Specified Sites about 1 mi. Off Shore from Vandenberg AFB
- ~ X, Y Spacing "Sites are about 1/2 to 1 mi. Apart in a Line
- Total Observation Sites Required 3



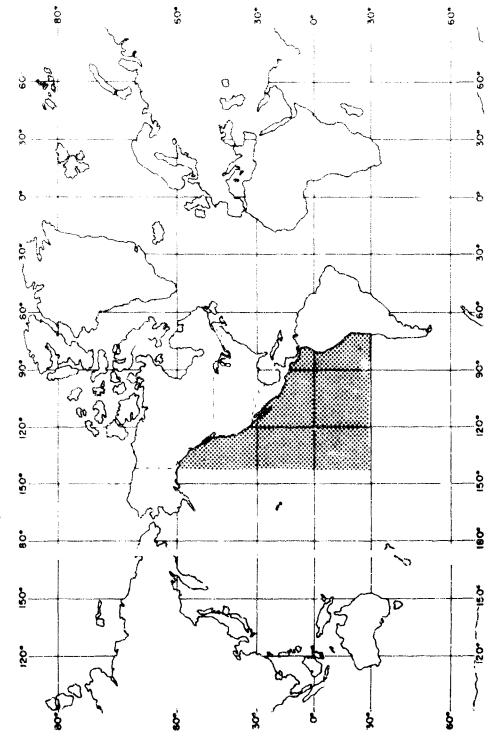
AMO #28-USAF (AWS)-Support western missile test range and "WINDS

Arsa = Global Deep Ocean X, Y Sparing = 600 n. mi. Total Observation Sites Required = 261



AMO #3-USAF (AWS)--Support global D.O.D. operations.

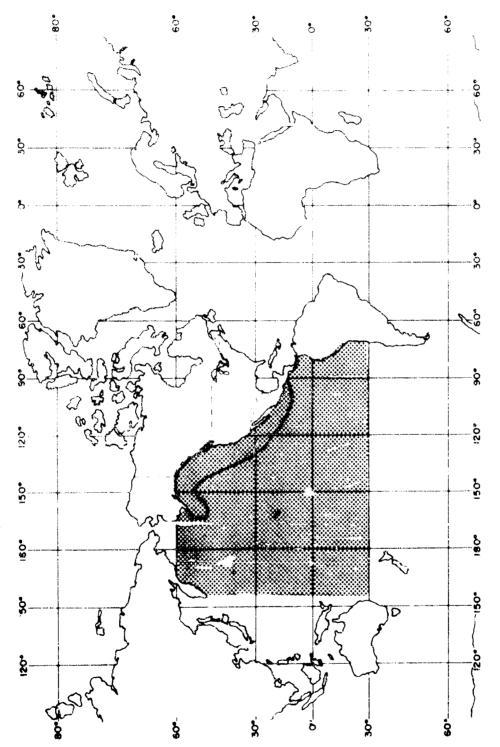
Area = Pacific Coast to 140 W, 30 S to 60 N X, Y Spacings = 100t 120n. mi. < 400 n. mi. from N. America 500 to 600 n. mi. > 400 n. mi. from N. America Total Observation Sites Required = 186



AMO #14-BCF, La Jolla-INstribution and environment of tuna, etc.

Area = Pacific Coast w/160°E, 30°S to Alaska
X. Y Spacings = 100 to 120 n. mi = 7400 n. mi. from N. America
500 to 600 n. mi = 400 n. mi. from N. America

Total Observation Sites Required = 214

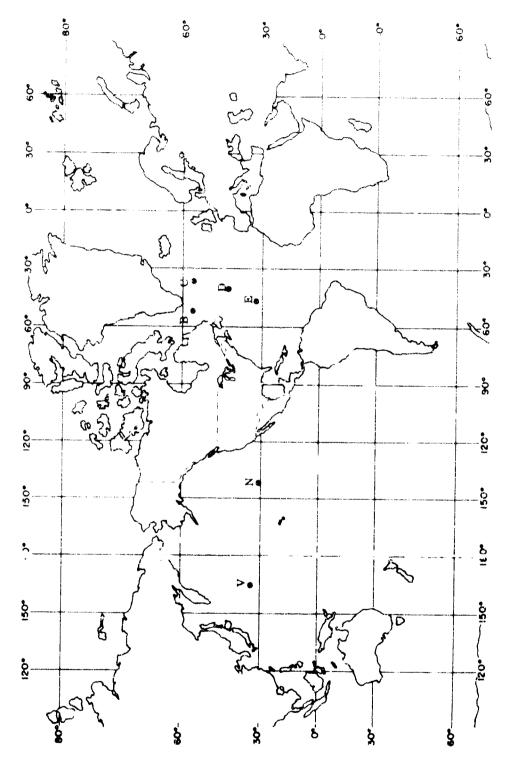


AMO #19-BCF, Washington, D.C.-Synoptic climatology.

A STATE OF THE PROPERTY OF THE PARTY OF THE

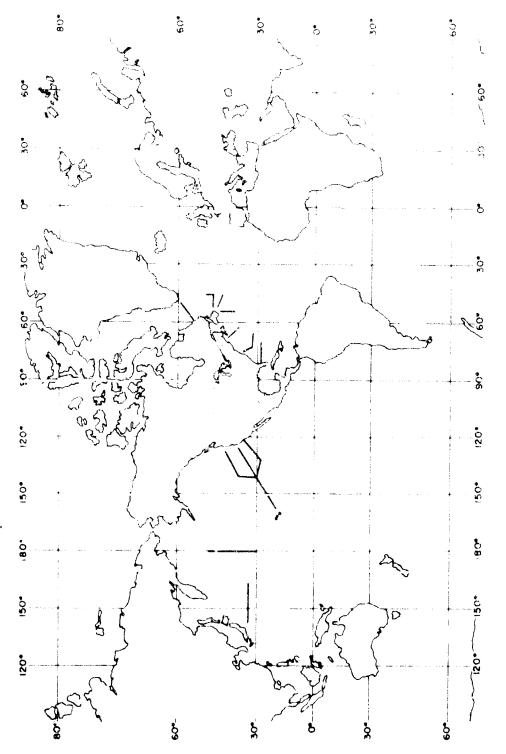
- Area = 4 OSVs in Atl ...c and 2 in Pacific X, Y Spacing = N/A trgle Points)

 Total Observation Str. Required = 6



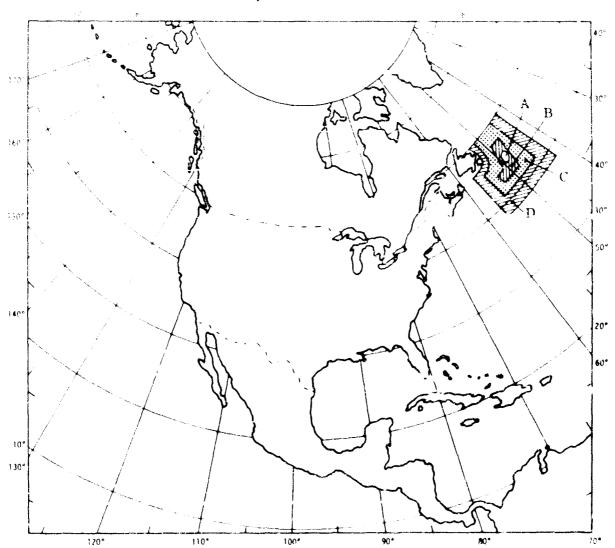
AMO #23-1/8CG-Ocean station vessels.

- Area = 7 Tracks in Atlantic and 6 in Pacific
 X, Y Spac.ng = 1 · to 25 n. mi. s 300 n. mi. from N. America
 25 to 60 n. mi. > 300 n. mi. from N. America
 Total Observation Sites Required = 227



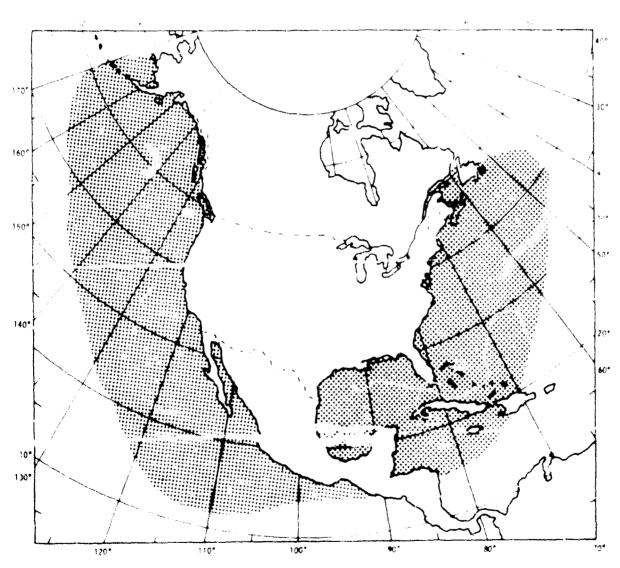
AMO *24-USCG-Data acquisition along standard sections.

- Area Grand Banks
- X, Y Spacing A. 7 Locations near 44°N, 48°W for continuous 6 hrly synoptic obs
 - B.~10~n.~mi~in~X~50~n.~mi.~in~Y
 - C. 30 n. mi. in X, 50 n. mi. in Y
 - D. 100 n. mi. in X, 100 n. mi. in Y
- Total Observation Sites Required 297



AMO \$25-USCG-Ice patrol monitoring.

- Area Ocean Areas Contiguous to the U.S. (Area Not Clearly Defined)
- X, Y Spacing Varies with Operation
- Total Observation Sites Required Unknown



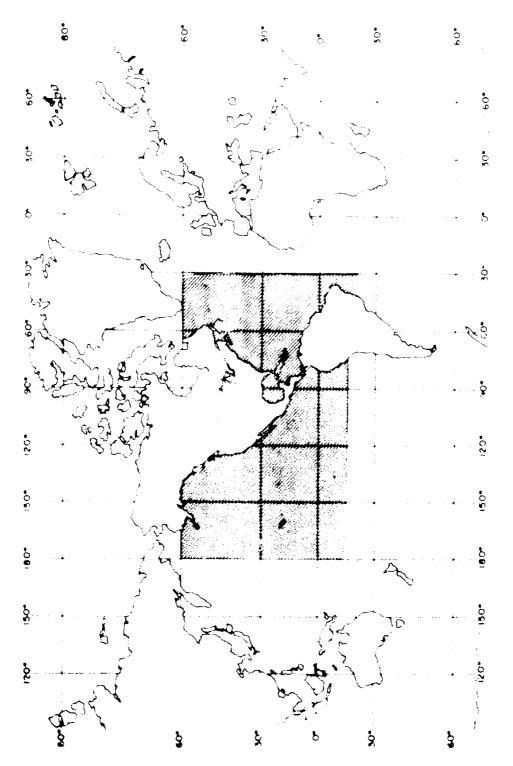
AMO \$27-USCG-Search and rescue.

- Arch Cont. Shelf of U.S. and Canada
- X, Y Spacing: Lines with Sites at 10, 26, 30, 50, 70 + 100 Fathoms and lines are about 100 n. mi. apart

Total Observation Sites Required 144

AMD \$28A-USCG-Coastal Oceanographic Services (weather net).

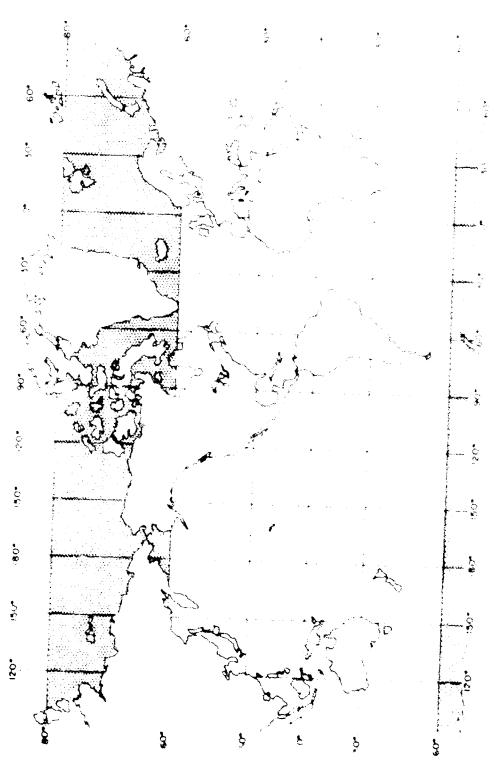
- Area W. Atlantic N of 20 S and E Pacific N of 15 S
- X, I Specing: Variable Lines with Sites 10 to 40 n mi. Apart in the Lines. The lines are 200 to 500 n. mi. Apart
 - - Total Observation Sites Required Unknown



AMO #28B - USCG - Oceanographic services (ocean surveys).



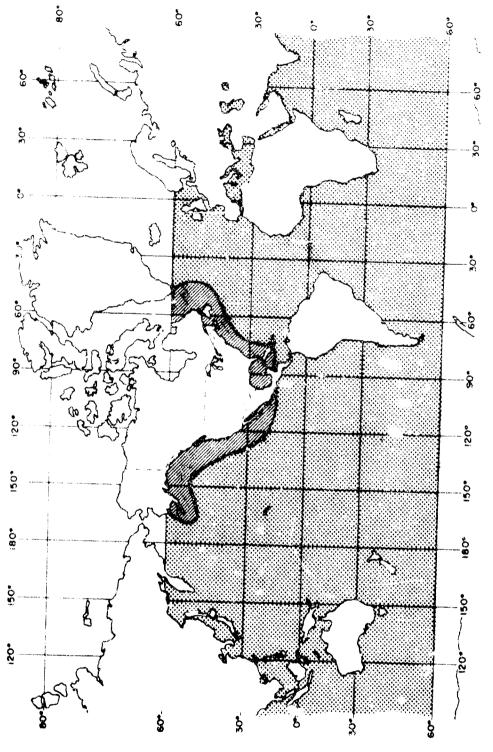
Area Arctic and Antarctic (Above 60°N, below 60°S) X, Y Spacing : Not Stated Yotal (Specific Sites Bequired - Unknown elects whe estates be technises - a tensor



AMO 42% CMO - har berakes and polar as recognapi

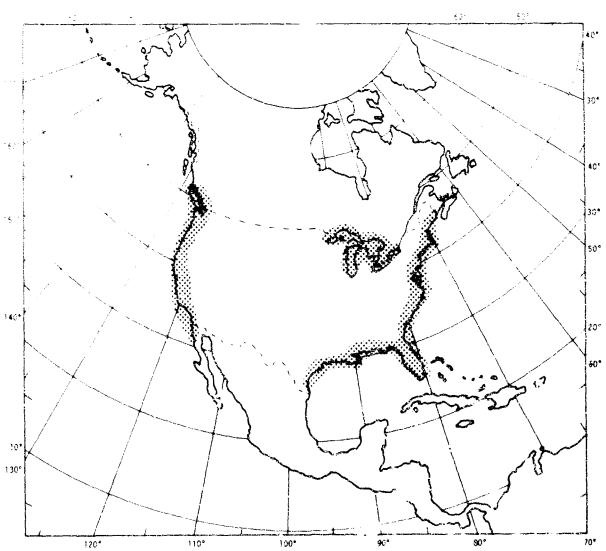
regend.

Area = Global Deep Ocean and Chastal North America
X, Y Spacing = 300 to 560 n.mi. (DO), 60 to 150 n.mi. (CNA)
Total Observation Sites Required = 540 (261-FO, 279-CNA)



AMO #30--35-ESSA-Totalagency requirements $X,\,Y=60\,\,to\,\,150\,\,n.\,\,mi.\,\, \#\,460\,\,n.\,\,mi.\,\,from\,\,N.\,\,A.\,\,Coast,\\ X,\,Y=300\,\,to\,\,600\,\,n.\,\,mi.\,\,global\,\,deep\,\,ocean\,\,60^{\circ}N\,\,to\,\,60^{\circ}S.$

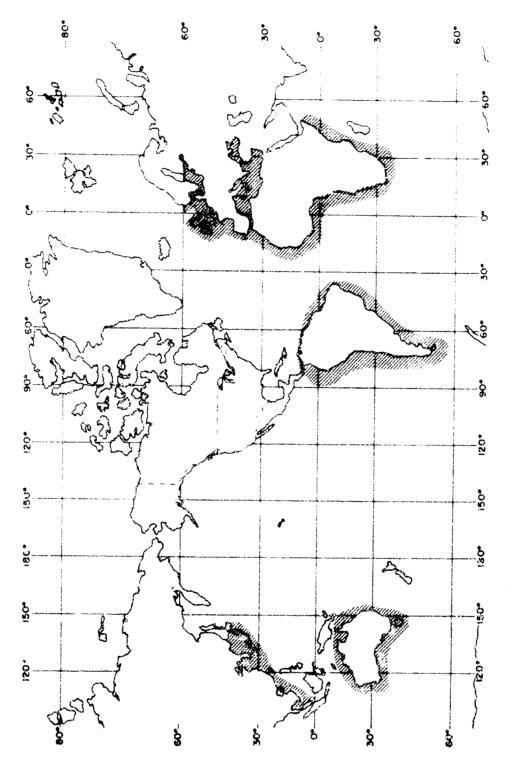
- Area Great Lakes, Estuaries and Near Shore Areas of U.S.
- X, Y Spacing 20 n. mi. and 0.1 n. mi. in Special Areas of Great Lakes 1 to 10 n. mi. in Estuaries and Near Shore
- Total Observation Sites Required = 800 (Estimated)



AMO #39-FWPCA, U.S. Dept. of Inverior-determine water quality.

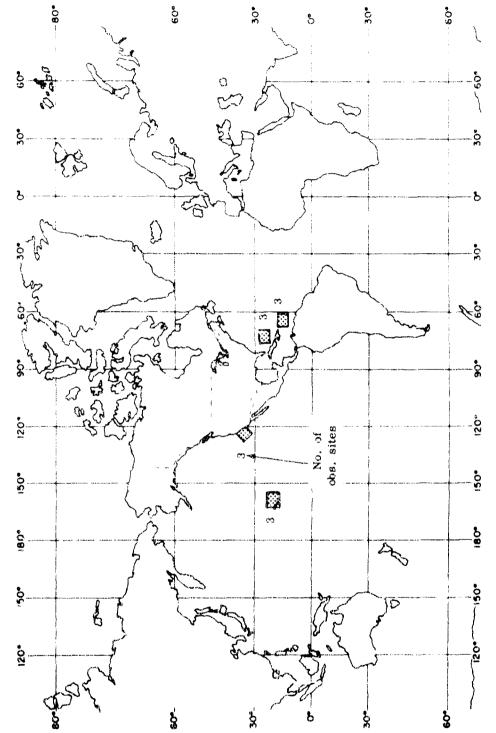
Legend

- Area = Out to 400 Fathons Depth from SE Asia, S. America, Africa, Europe and Australia X, Y Spacing = N/A (Single pts)
 Total Observation Sites Required = Unknown



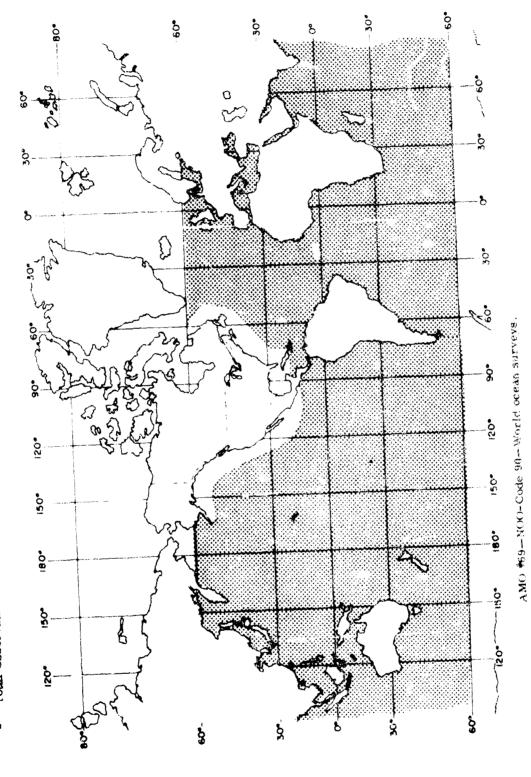
AMO #67-NOO-Code 80, Inshore Surveys-Measure depth of water to 400 fathoms.

Area = 2 Test Ranges in Atlantic and 2 in Pac'fic X, Y Spacing = 3 Sites 10 n. mi. Apart Within 20 n. mi. of Island in each Range Total Observation Sites Required = 12



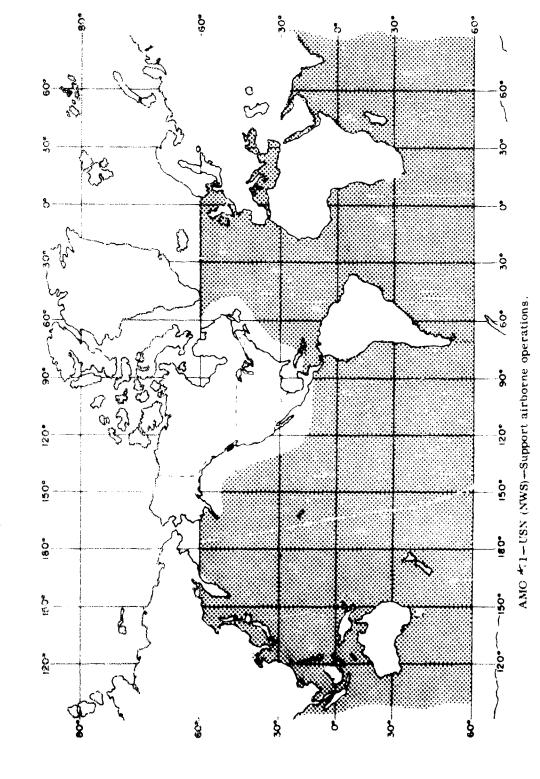
AMO #68-NOO-Code 90-Underwater environmental monitoring for test ranges.

Legend:
- Area = Global Deep Ocean
- It Y Spackig = 1 Site at a Time or Unknown
- Total Observation Sites Required = Unknown

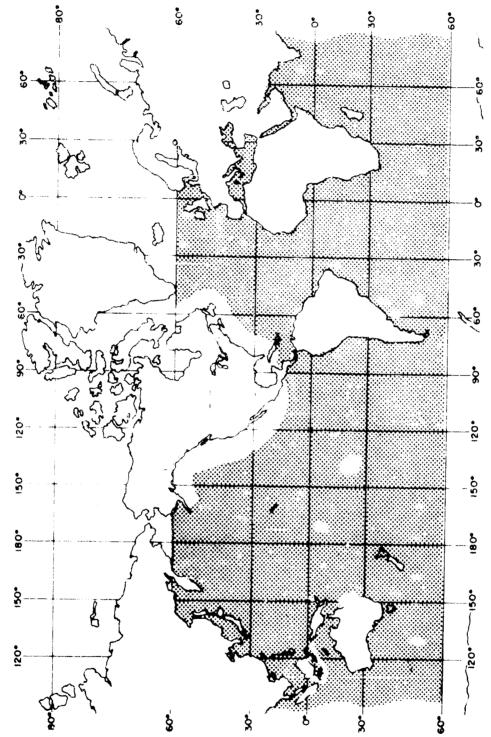


Legend

- Area = Global Deep Orean
 X, Y Spacing = 600 r. ml.
 Total Observation Sizes Required = 261

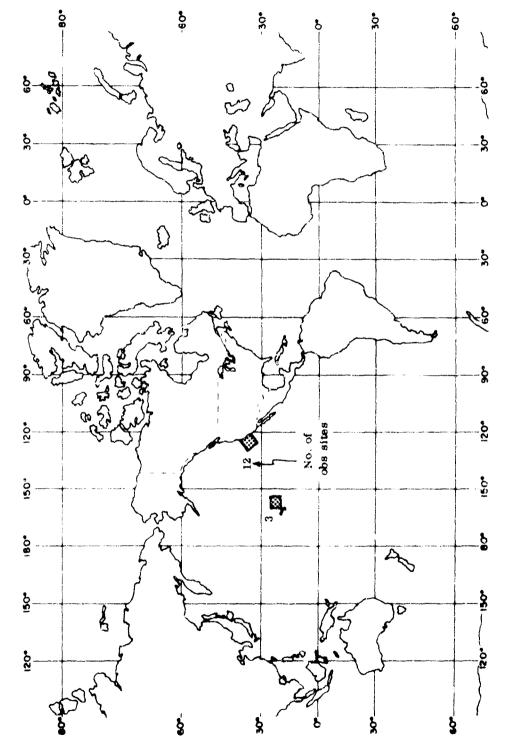


- Area = Global Deep Ocean X, Y Spacing = 600 n. mi. Total Observations Required = 261



AMO #72-US (NWS)-Support water surface and subsurface operations,

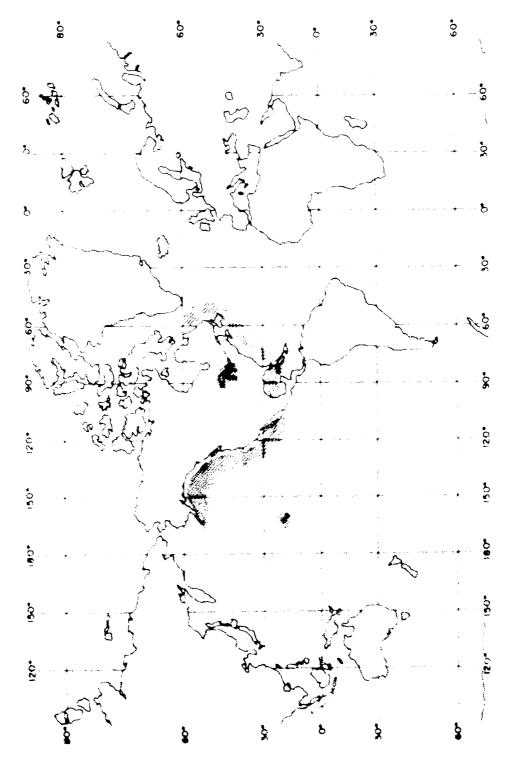
Area = 2 Ranges in Pacific X, Y Specing = 25 to 50 n. mi. Total Observation Sites Required = 15



AMO \$73-USN, Pacific Missile Range-Support range with environmental data.

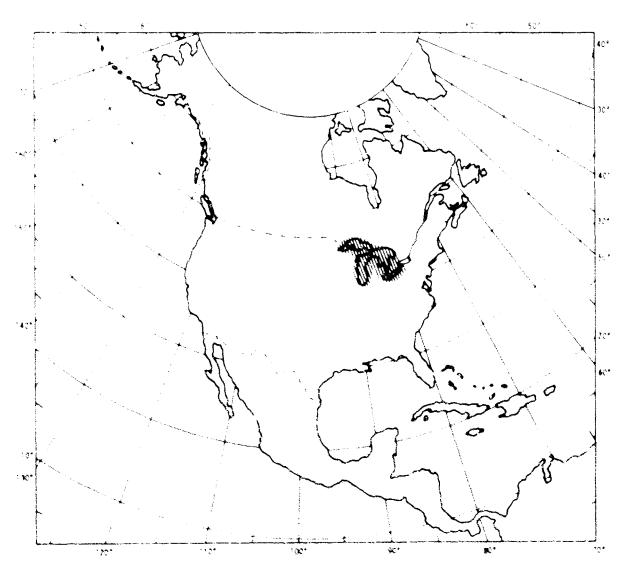
APPENDIX III, PART B. GEOGRAPHICAL AREAS AND REQUIRED NUMBER OF OBSERVATION SITES FOR RESEARCH AMOS

- Area North American Coast, Hawaii and Great Lakes where Double 125 m X, Y Spacing et 500 n. mt. Total Chaervation Sides Required 7.24



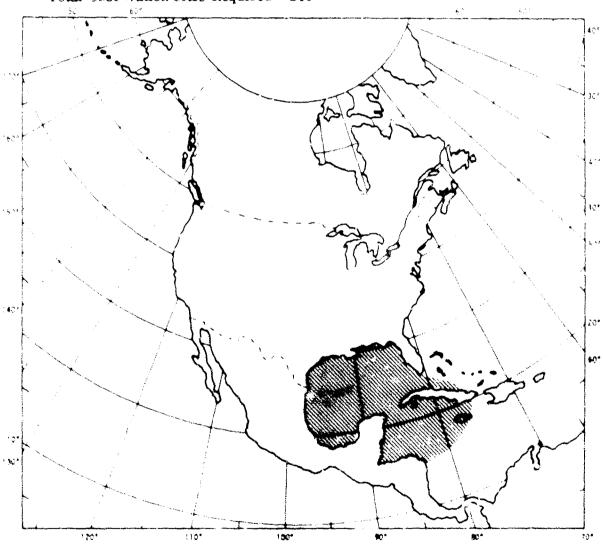
AMO 45-13. Army, Coastal Engineering Research Center-Jesearch in coastal engineering.

- Area = Great Lakes
- X, Y Spacing = 27.5 n. mi.
- Total Observation Sites Required = 250



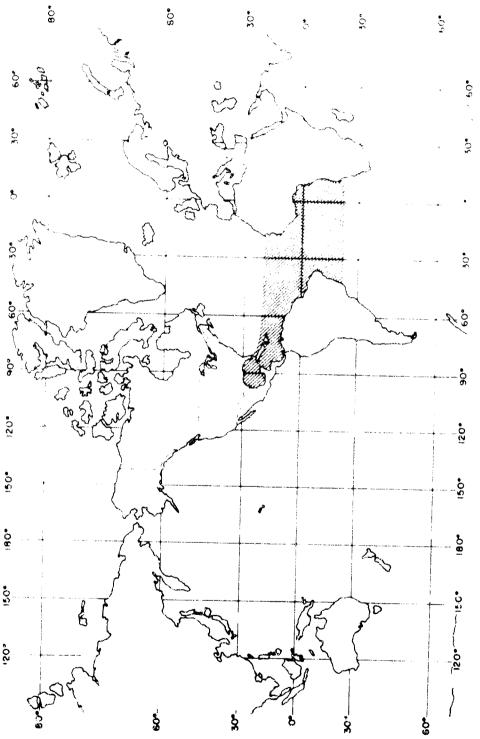
AMO 68-U.S. Army, Lake Surveys-Water motion research in the Great Lakes.

- Area = Gulf of Mexico and Caribbean
- X, Y Specing = 10 n. mi. Near Shore, 50 n. mi. Off Shore and 100 n. mi. in Deep Water
- Total Observation Sites Required = 244



AMO 48-BCF, Galveston-Research on water masses.

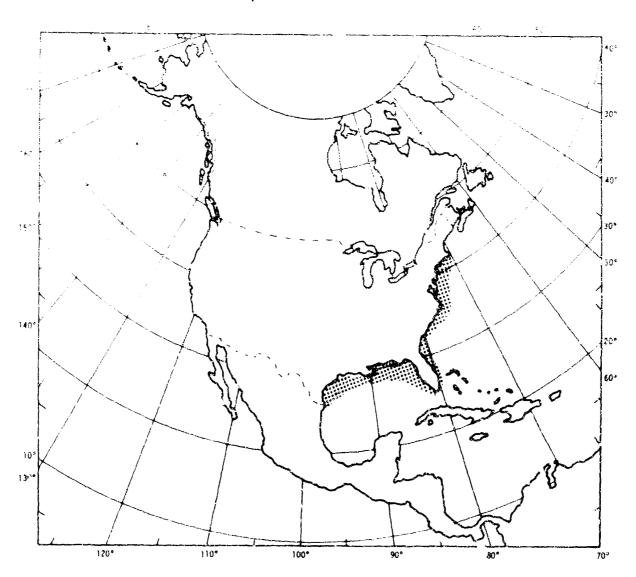
- Area = Tropical Atlantic 20° N to 20° S an. Gulf of Mexico = X, Y Spacing = A) 500 n. mi. Outside Areas of Special Interest B; 6 to 30 n. mi. in Areas of Special Interest - Total Observation Sites Required = 80



AMO #9-BCF, Miami-Research on tuna,

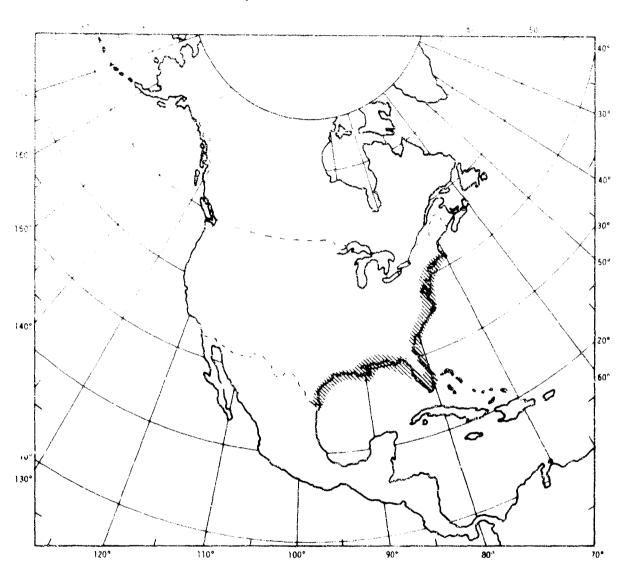
THE RESERVE THE PROPERTY OF TH

- Area Cont. Shelf Maine to Texas out to a Maximum of 200 m.
- X, Y Spacing = 100 n. mi.
- Total Observation Sites Required = 42



AMO 410- BCF, Beaufort, N. C.-Research on menhaden and blue crab.

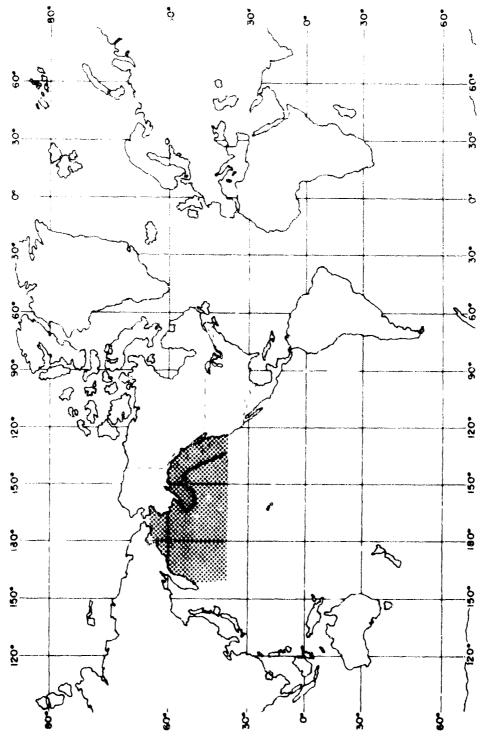
- Area = Estuaries and Near Shore Areas Cape Cod to Texas
 X, Y Spacing = Will Vary with Areas of Interest. At Present Limits Are Not Known
- Total Observation Sites Required = Unknown



AMO #11-BCF, Beaufort, N. C.-Research on menhaden and blue crab.

- Area = W.Coast of U.S. to 160° E, 40° N to Bering Sea
 X, Y Spacing = 60 to 100 n. mi. > 400 n. mi. from North American Coast, 5 to 60 n. mi. < 400 n. mi. from North American Coast

- Total Observation Sites Required = 400 (Estimated)

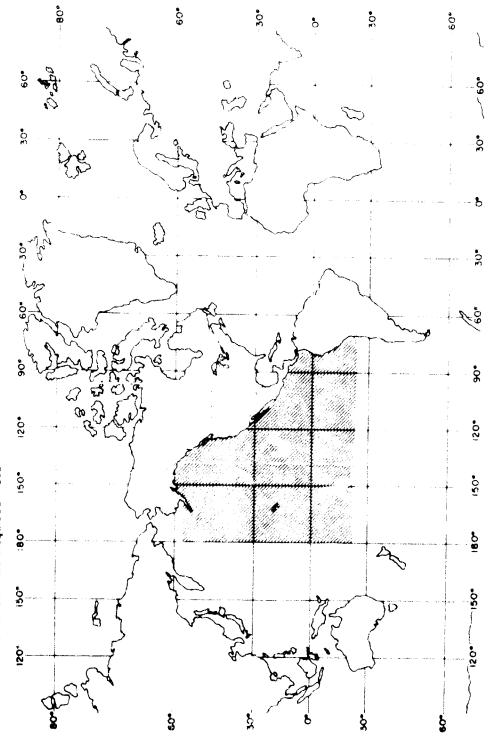


AMO #12-BCF, Seattle-Research on commercial figh.

- Area = Cross-Current Lines in Pacific N of 20° S, W Coast to 180° - X, Y Spacing = 60 to 100 n. ml. in Lines up to 600 n. ml. Apart (5 400 n. ml. from North America)

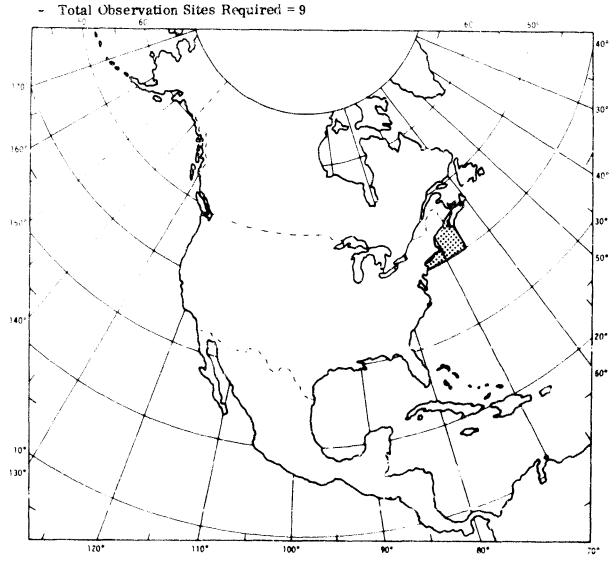
100 to 300 n. mi. in Lines up to 600 n. mi. Apart (> 400 n. mi. from North America)

Total Observation Sites Required = 113



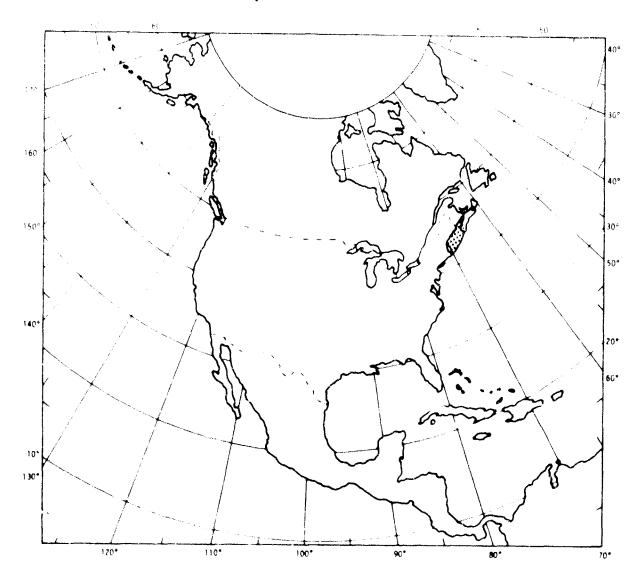
AMO •13-BCF, Stanford-A resea interaction research.

- Area = New England Cont. Shelf 40° N to 45° N and 64° W to 74° W
- X, Y Spacing = 100 to 300 n. mi. for Surface Parameters, 30 to 100 n. mi. for Oceanographic Parameters



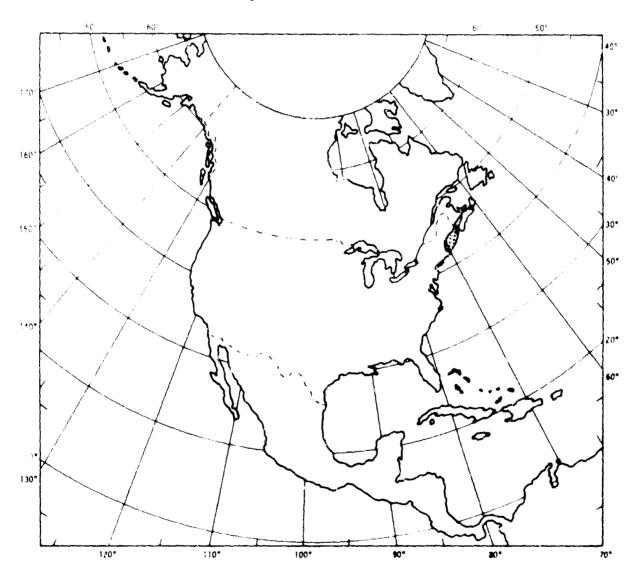
AMO #15-BCF, Woods Hole-Research on major ground tish species off New England Coast.

- Area = Gulf of Maine Off Shore
- X, Y S acing = 25 to 30 n. mi. or at Least 3 Sites
- Total Observation Sites Required = 3



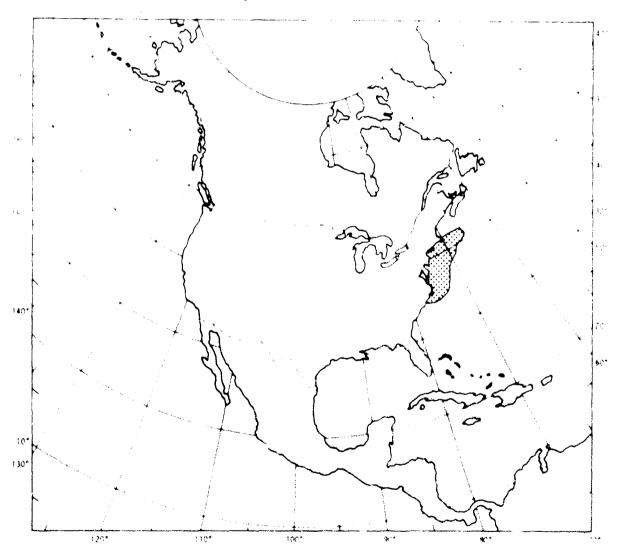
AMO ∲16-BCF, Booth Bay Harbor-Research on herring, lobster and sardine.

- Area = Gulf of Maine On Shore
- X, Y Spacing = 8 to 13 n. mi.
- Total Observation Sites Required = 50



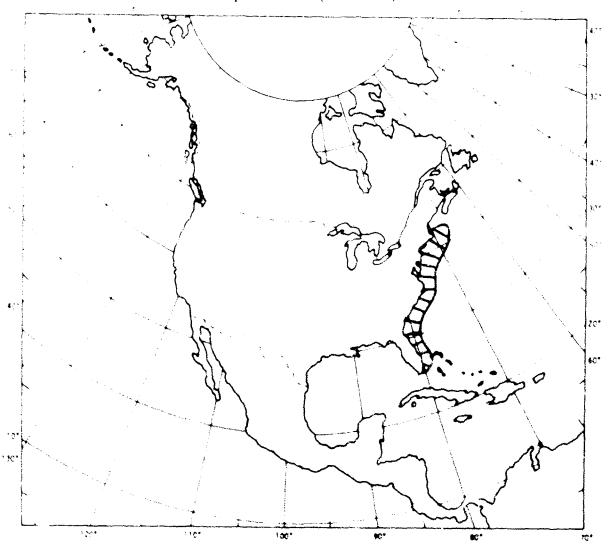
AMO #17-BCF, Booth Bay Harbor-Research on herring, lobeter and sardine.

- Area U.S. Cont. Shelf N of Cape Hatteras
- X, Y Spacing Transect Lines Variously Oriented with Sites at 20 m Contou 3 on the Lines
- Total Observation Sites Required = 100 (Estimated)



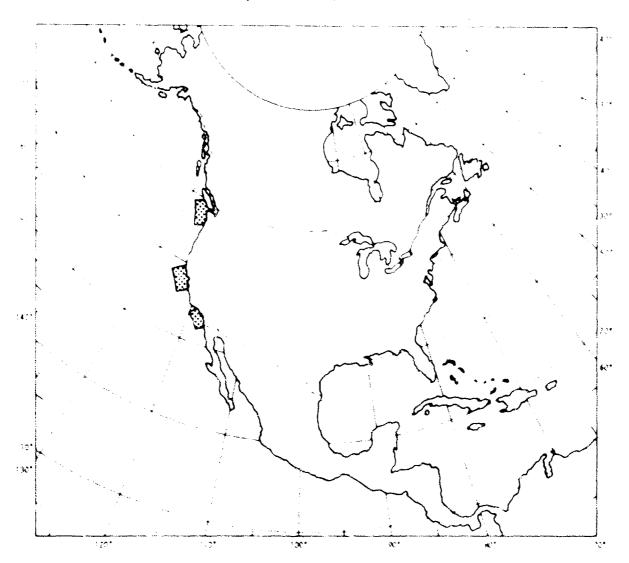
AMO #18-BCF, Washington, D. C.-Environmental oceanographic research.

- Area End of George's Bank to Florida Keys out to a Depth of 70 Fathoms
- X. Y Spacing Transect Lines About 100 n. mi. Apart, Spacing in Lines 11, 2 5, 10, 20, 30, 40, 50 n. mi. from the Coast Line.
- Total Observation Sites Required = 100 (Estimated)



AMO \$20-BSF-Sandy Hook Marine Lab,-Fish distribution along east coast of U.S.

- Area West Const Cont. Shelf of U.S. (3 Areas)
- X, Y Spacing = Varies 10 to 45 n. mi.
- Total Observation Sites Required = 100 (Estimated)



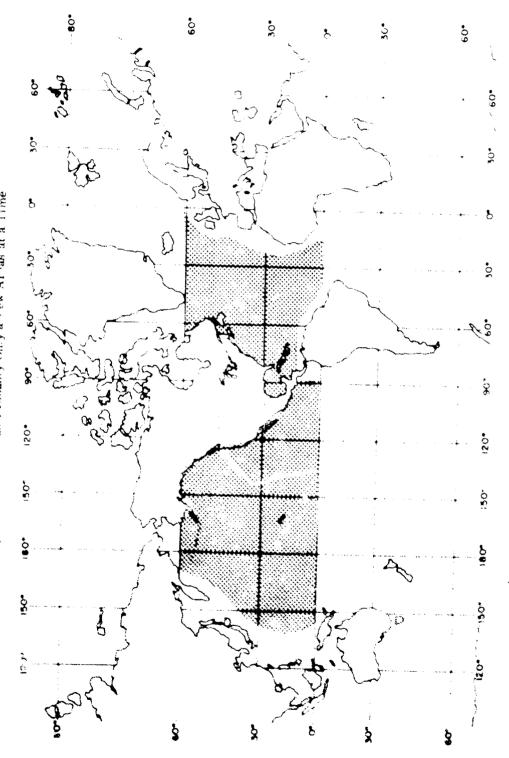
AMO \$21-BSF. Tiburon-Fish distribution along west coast of U.S.

Costored

- Area * North American Coast, Deep Ocean Atlantic and Pacific

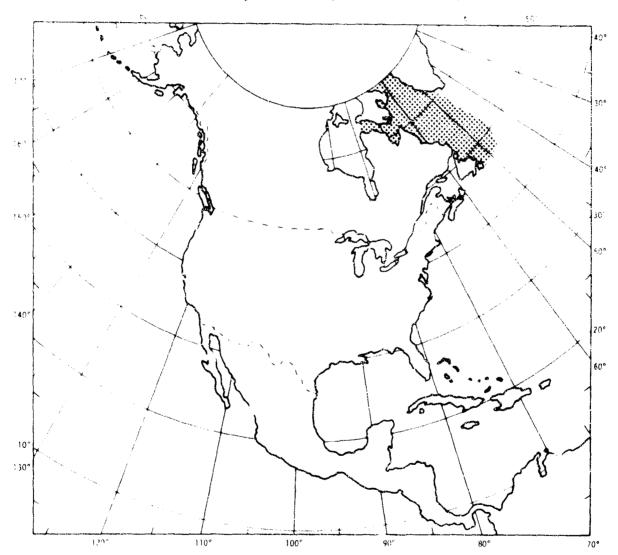
- X, Y Spacing * 50 n. ml.

- fotal Chaervation Sites Required - Variable as Probably (mly a Few Areas at a Time



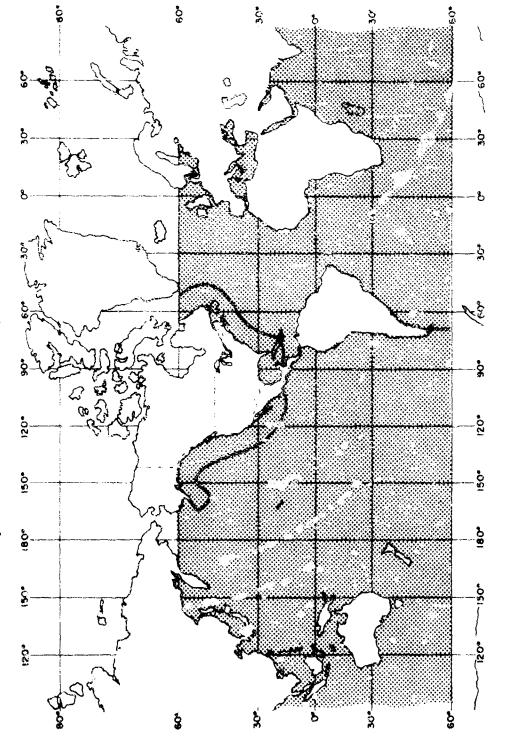
AMO #22-Bureas of Mines, Dept. of interior-Develop manne maing test nology.

- Area = Grand Banks, Labrador Sea, Baffin Bay and Hudson Straits
- X, Y Spacing = 30 to 100 n. mi.
- Total Observation Sites Required = 111 (100 are N of 60° N)



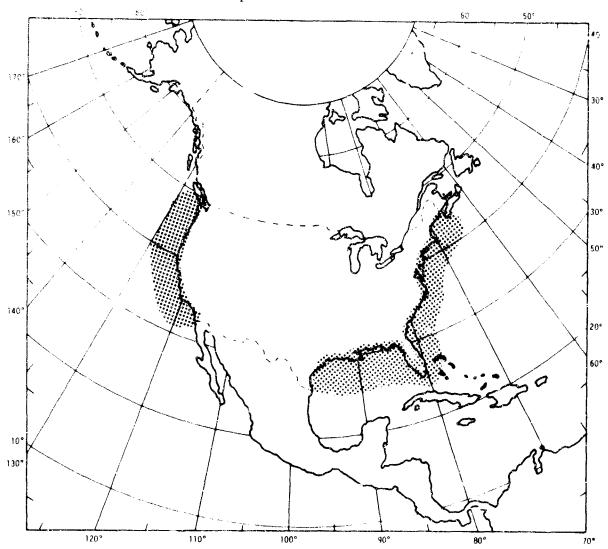
AMO #26-USCG, Ice Patrol-Icebreaking and research on polar oceanography.

- Area = Global Deep Ocean and North American Coast (Selected Areas for 30 day Periods)
- X, Y Spacing = 300 to 600 n. ml. (DO) and 60 to 150 n. ml. (CNA)
- Total Observation Siz 8 Required = A Few at a Time for 30 Days



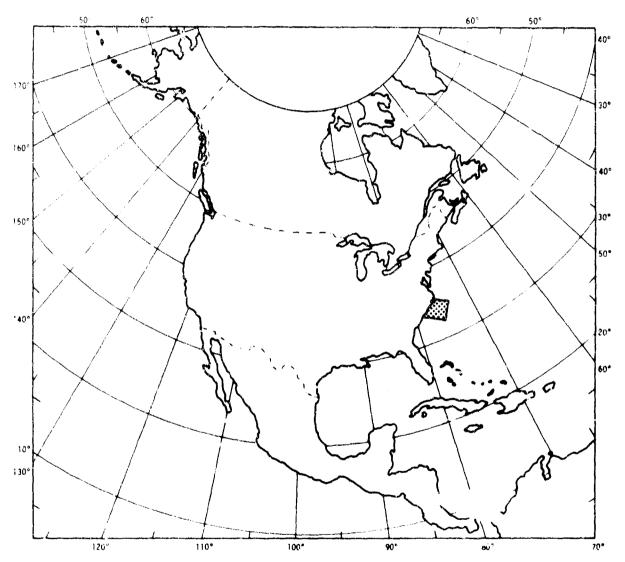
AMO #31, 32, 36 and 37-ES3A-Total agency research requirements.

- Area = U.S. Coastal Waters
- X, Y Spacing = 25 to 50 n. mi. \leq 50 n. mi. from the Coast and 100 n. mi. Elsewhere Plus 4 Sites in Specified Areas
- Total Observation Sites Required = 74 Plus an Unknown Number in Estuaries



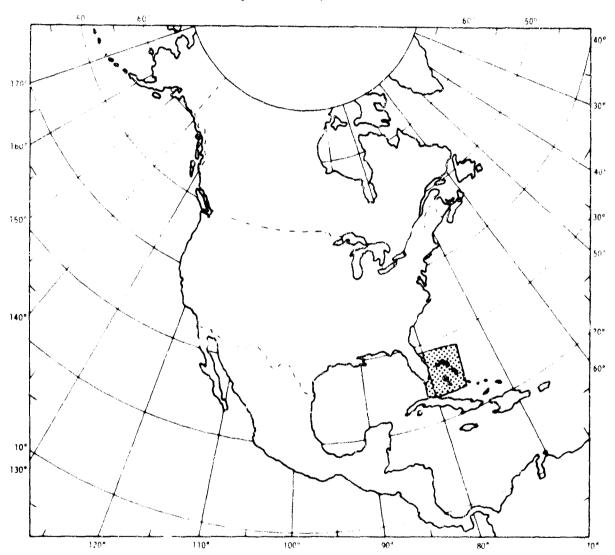
AMO #40-HEW, PHS-Research on effect of pollutants on shellfish.

- Area = Onslow Bay, North Carolina to 160 n. mi. out in Gulf Stream
- X, Y Spacing = 1 Line with Sites Spaced at 10, 25, 50, 75, 100 and 200 m Contours
 Plug 1 Site on Either Side of Line About 30 n. mi. Distance
- Total Observation Sime Required = 8



AMO #44-NSF, Duke U.-Basic research in Gulf Stream structure and dynamics.

- Area Florida Straits, off Bimini, Bahamas and Miami
- X, Y Spacing = Special Points about 3 and 7 m. mi. from a Sound Source
- Total Observation Sites Required = 20 (Estimated)



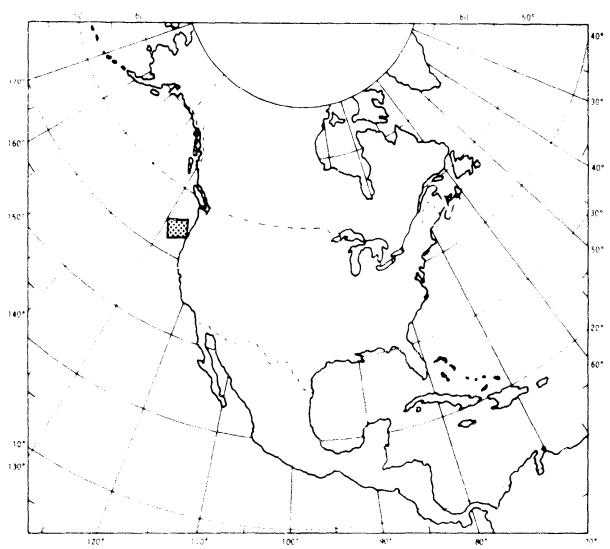
AMO #47-USF, U. of Miami-Research on oceanographic environmental parameters and underwater acoustical propagation.

- Area = Atlantic and Pacific 12° N to 12° S - Elsewhere 50 n. mi. in Current and 300 n. mi. Outside of

,09 -30 --60 \approx - Total Observation Sites Required = 1500 (Estimated) 150 .08 Current Š ò ģ Š

AM:) #49-NSF, U. of Mismi-Research on oceanographic enivironmental parameters and equatorial current system.

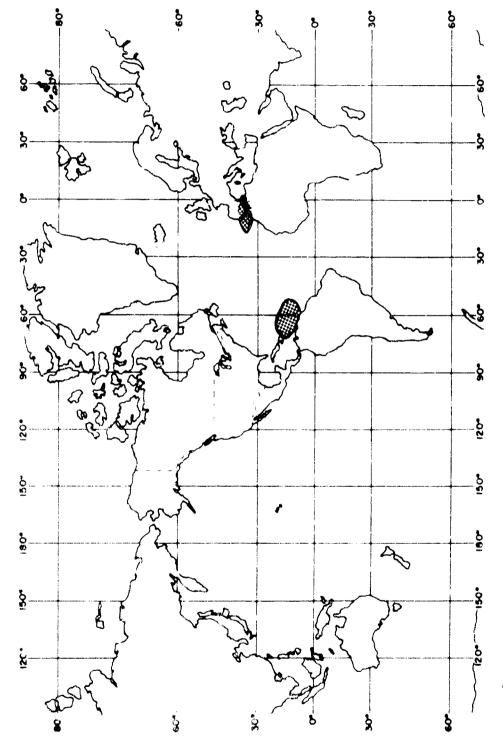
- Area = 100 mi. Square Centered at 45° N and 125° W
- X, Y Spacing = Not Certain May Bo About 5 n. mi.
- Total Observation Sites Required = 35 (Estimated)



AMO #51-NSF, Oregon State U.-Research on wind stress on the ocean.

- Area = Gibraiter and Caribbean

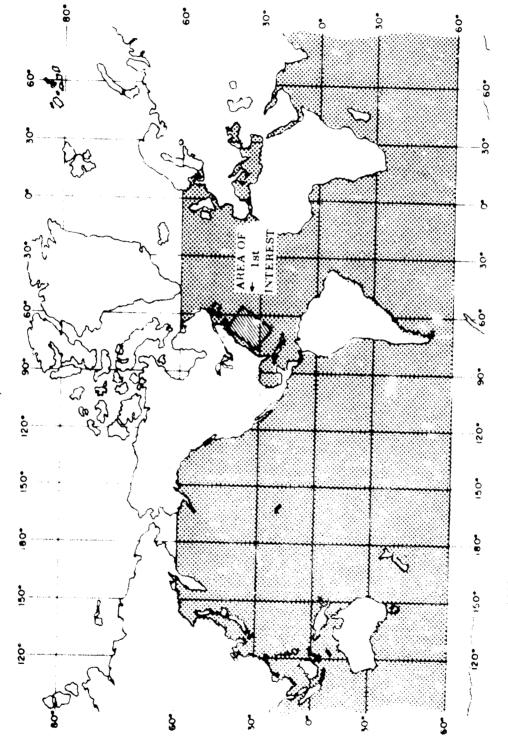
- X, Y Spacing =1 Per Area Except in Deep Channels Where Spacing of 2 to 5 n. ml. May Be Necessary - Total Observation Sites Required =8



AM: \$54-NSF, Lamont Geophysical Observatory-Current measurements along sills and renewal of water in deep be silve.

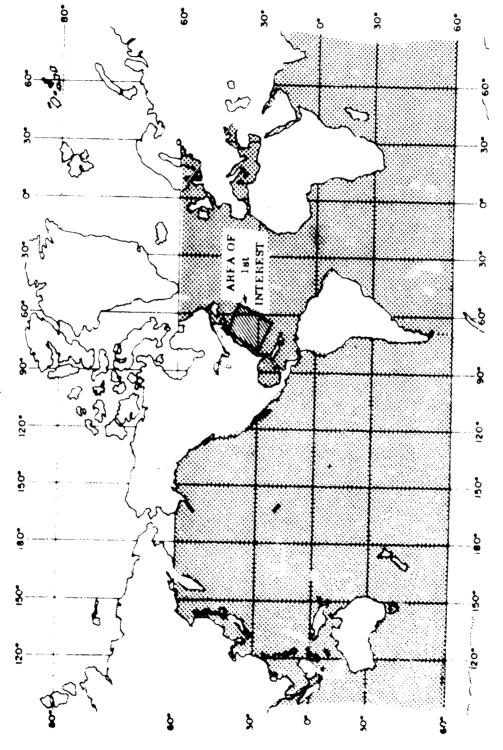
Legend:

- Area = World Oceans and East Coast of U.S.
- X, Y Spacing = 200 to 300 n. mi. Except 20 n. mi. in Strong Currents Total Observation Sites Required = £00 (Estimated)



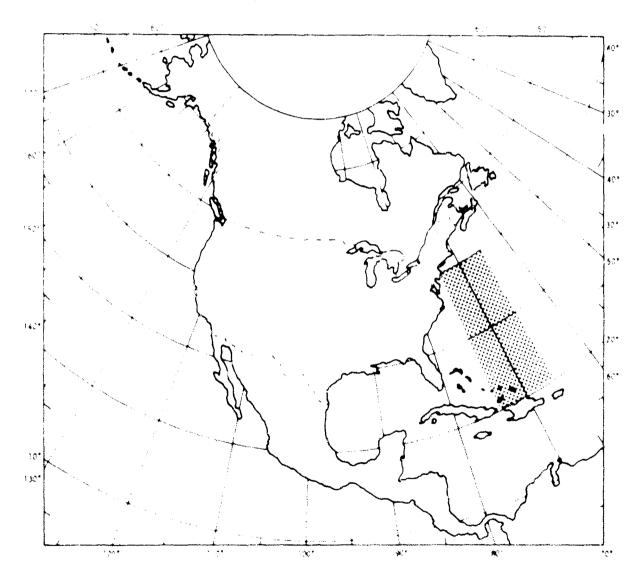
AMO •56-ONR, New York U.-General Circulation of the oceans.

- Area World Oceans and East Coast of 18.
- X,Y Spacing = 200 to 300 n. mi. Except 20 n. mi. in Strong Currents Total Chaervation Sites Required = 800 (Estimated)



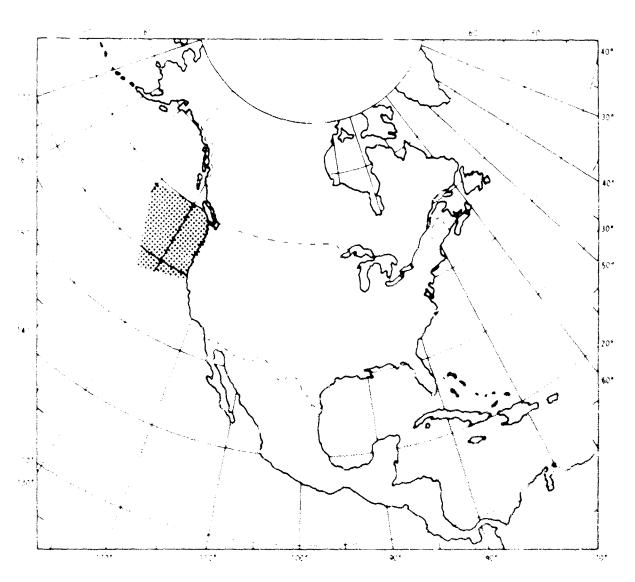
AMO \$57-ONR, New York U.-Air/ses interaction-emphasis on wave furecasting.

- Area = 20° N to 40° N and 65° W to 75° W
- X,Y Spacing = 6 n. mi. in Gulf Stream and 20 n. mi. Outside of Stream
- Total Observation Sites Required = 2000 (Ectimated)



AMO \$58-NSF, Woods Hole-Study dynamic p. xcess of the western North Atlantic.

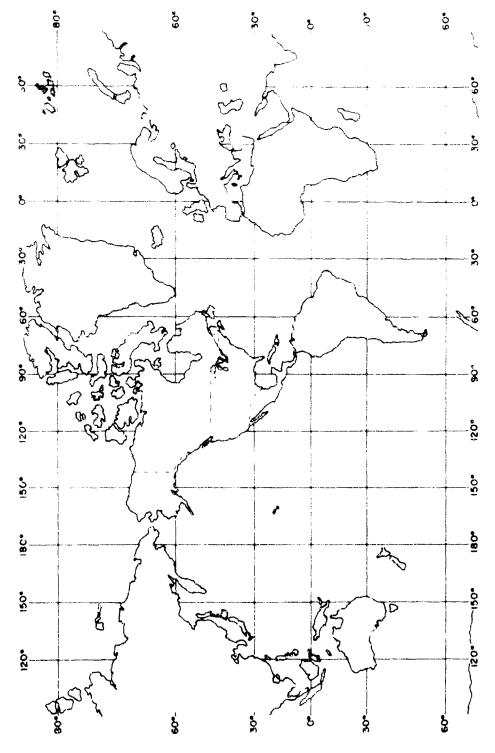
- Area = Mouth of the Columbia River to 600 n. mi. W, 300 n. mi. S and 200 n. mi. N
- X, Y Spacing = 25 n. mi.
- Total Observation Sites Required = 480



AMO #59-NSF, U. of Washington-Study eifluent waters of the Columbia River.

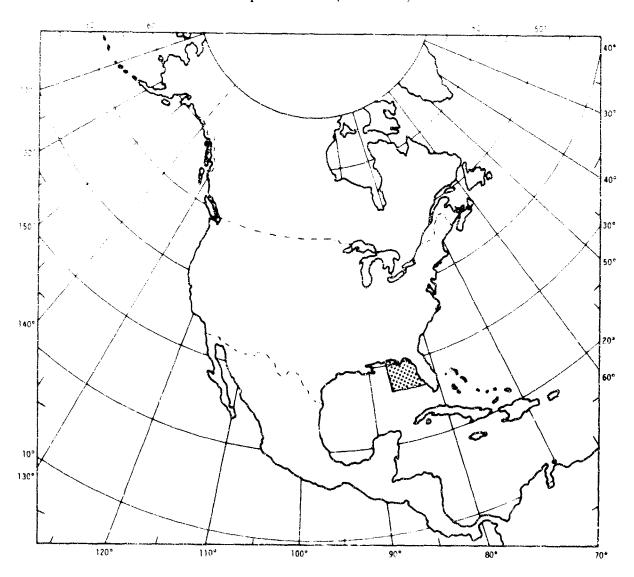
1000

- Area = Unknown
- X, Y Spacing = 10 n. mi.
- Otal Observation Sites Required = Unknown



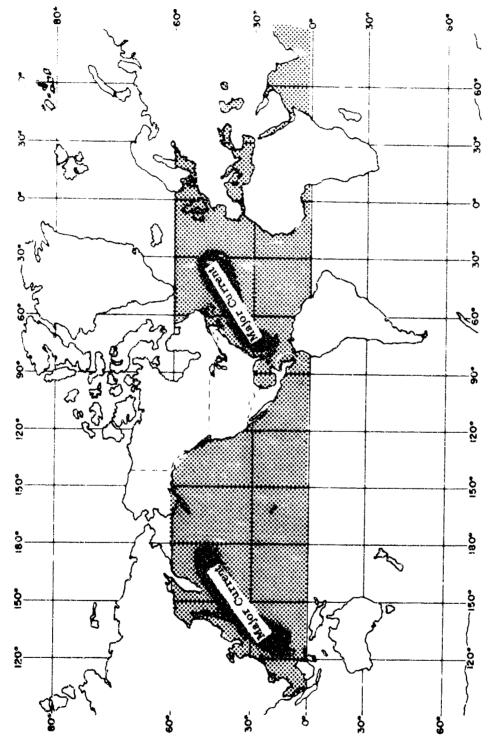
AMO #62-Smith sonian Institution-Biological Rowth studies.

- Area = Gulf of Mexico Near Panama City Out to 200 m Depths
- X, ∇ Spacing = 1/4 n. mi. to 10 n. mi.
- Total Observation Sites Required = 200 (Estimated)



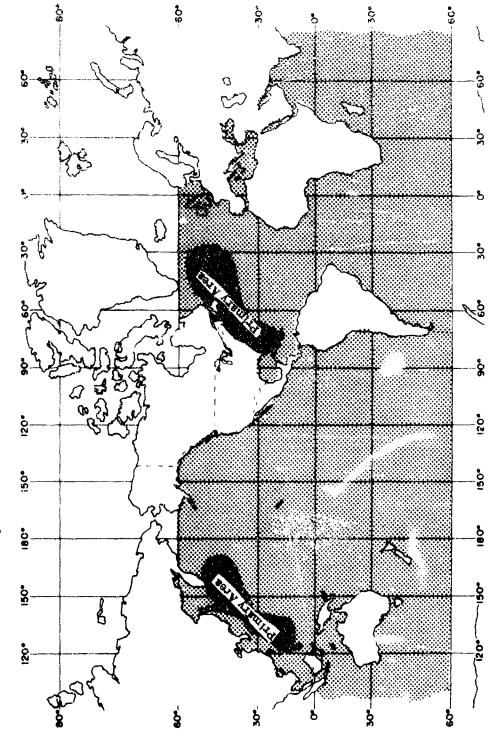
AMO #65-USN. Mine Defense Lab.—Mine defense including inshore undersea warfare.

- Area = Northern Hemisphere Oceans, Primary Interest Within Major Current Areas
 X, Y Spacing = Varies 30, 50, 400 n. mi. in Current Areas, 80 and 400 n. mi. Outside Current Areas
 Total Observation Sites Required = 600 (Estimated)



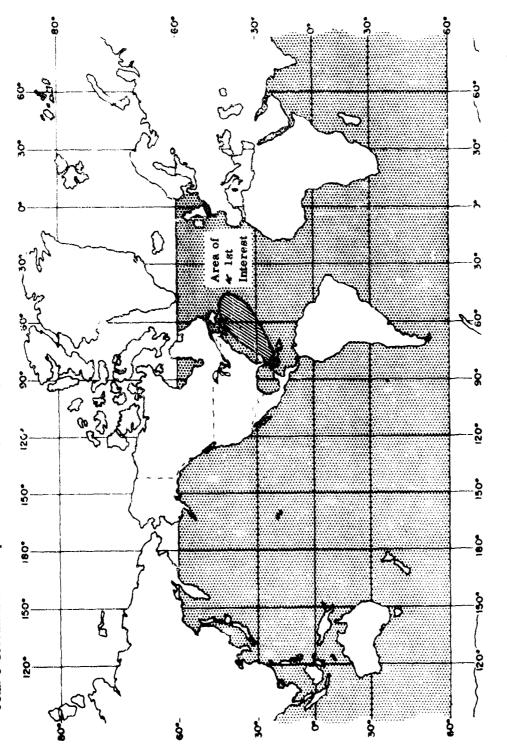
AMO #66-NOO, ASWF PS-Oceanographic environmental prediction techniques, P & D test and evaluation.

- Area = World Oceans
 X, Y Spacing = 300 n. mi.
 Total Observation Sites Required = 610



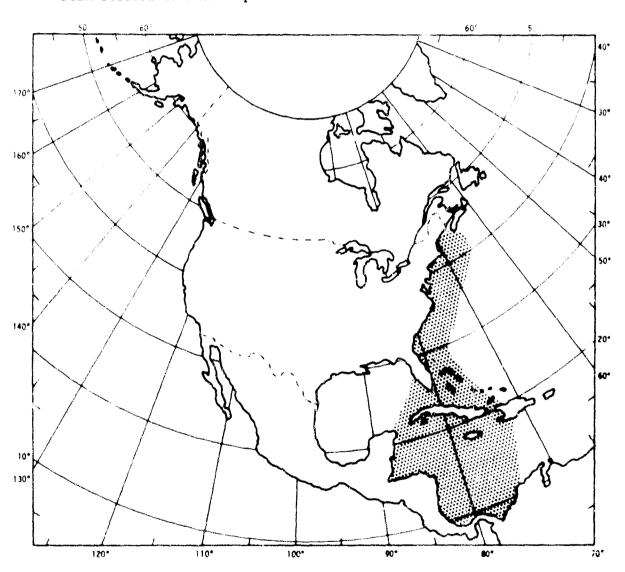
AMO #76-ORL, Penn. State-Large scale factors affecting transmission of underwater sound.

- Area = Selected Areas of World Oceans
- X, Y Spacing = 8 Buoys in a 5.5 n. mi. Grid
- Total O servation Sites Required = Variable, Probably a Few at a Time



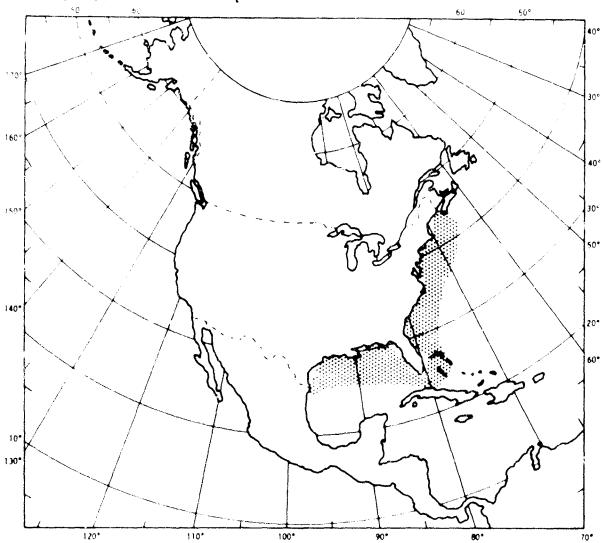
AMO \$77-ORL, Penn. State-Small scale factors affecting transmission of underwater sound.

- Area = East Coast and Caribbean
- X, Y Spacing = 1 Point at a Time
- Total Observation Sites Required = 1 at a Time



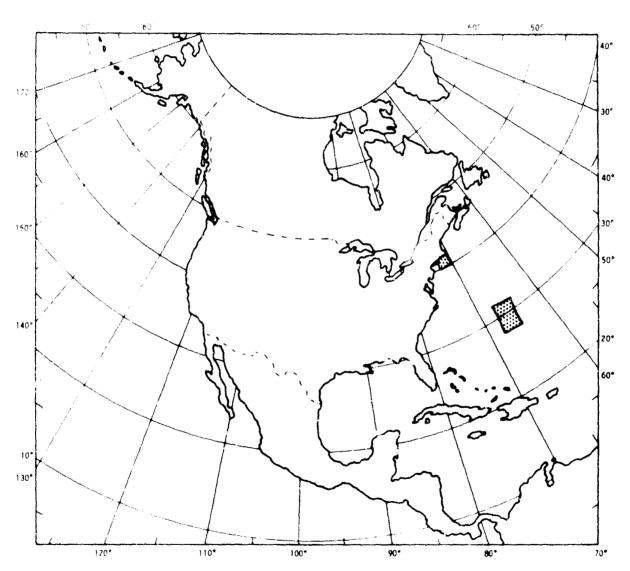
AMO #79-USN, Marine Eng. Lab.-Testing of deeply submerged machinery.

- Area = U.S. East Coast Cont. Shelf and Deeper Water Within Telemetry
 Distance of Land
- X, Y Spacing = 4 Sites in a Square 20 n. mi. Apart
- Total Observation Sites Required = 4 at a Time



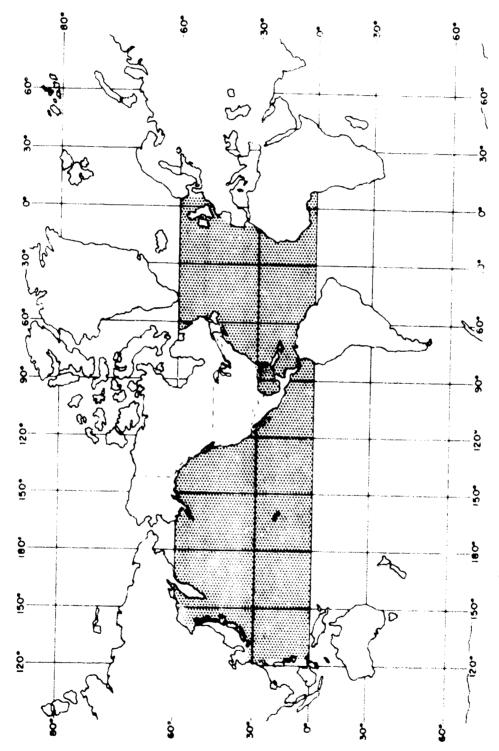
AMO #80-USN, Marine Eng. Lab.-Geomagnetic noise study.

- Area = Block Island Sound and South of Bermuda Out to 150 n. mi.
- X, Y Spacing = 9 n. mi. and Variable
- Total Observation Sites Required = 20 (Estimated)



AMO #81-USN, Underwater Sound Lab.-Acoustic raypath studies.

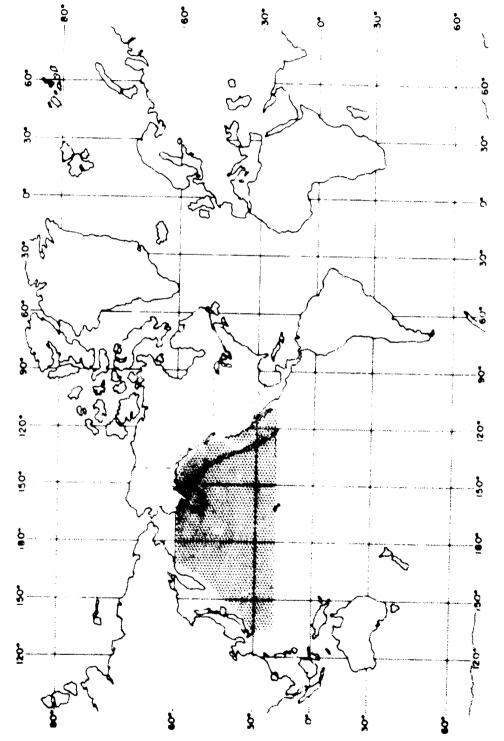
- Area = North Atlantic and North Pacific X, Y Spacing = 100 to 600 n. ml. Total Observation Sites Required = 199



AMO \$82-USN, NSR & DC-Test seaworthiness of ships.

- Area = Pacific 20° N to 60° N and 110° W to 130° E - X, Y Spacing = 500 n, mi. 2400 n. mi. ft. n U.S. Coast, 100 n. mi. < 400 n. mi. from U.S. Coast

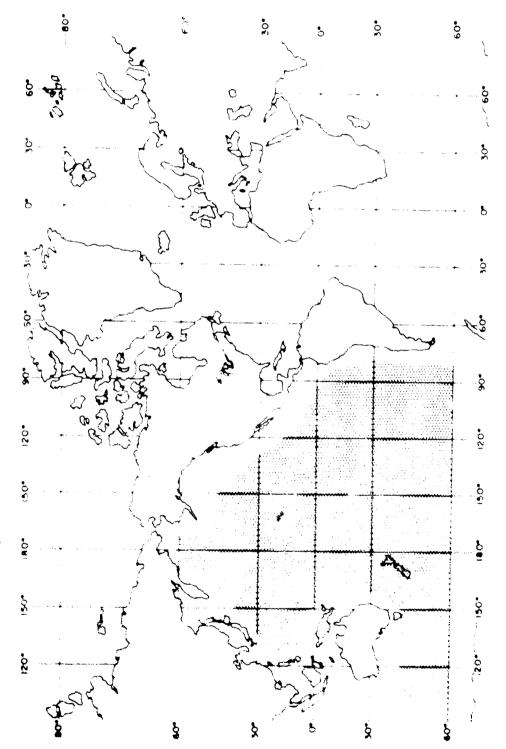
- Total Observation Sites Required * 133



AMO \$54...ON Scripps Inst. of Oceanography...Basic research on N. Pacific and atmosphere.

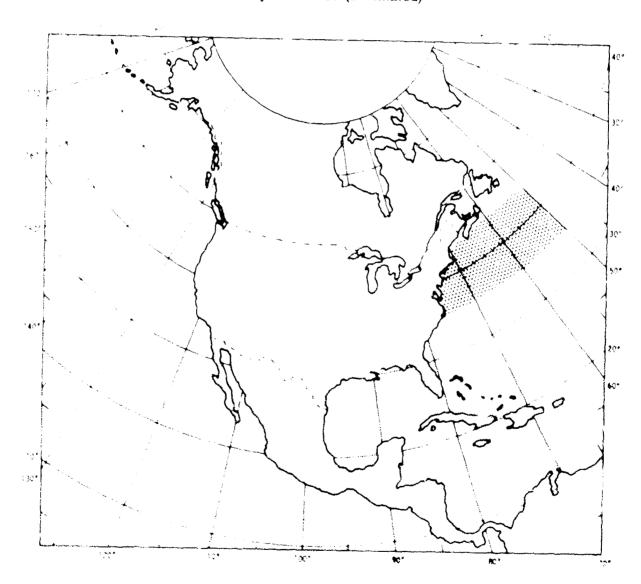
- Area " Deep Pacific, 1 rimarily Deep Currents

- X, Y Spacing * Unknown - Total Observation Sites Required : Unknown



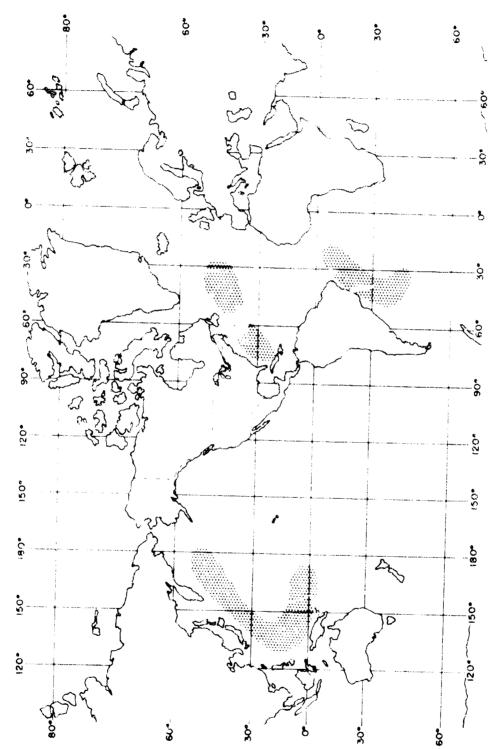
AMO 485-AEC, Scripps Inst. of Oceanography-Research on near bottom currents.

- Area = 35° N to 45° N and 50° W to 75° W
- X, Y Spacing = 10 n. mi. in Gulf Stream, 60 mi. Outside Gulf Stream
- Total Observation Sites Required = 750 (F imated)



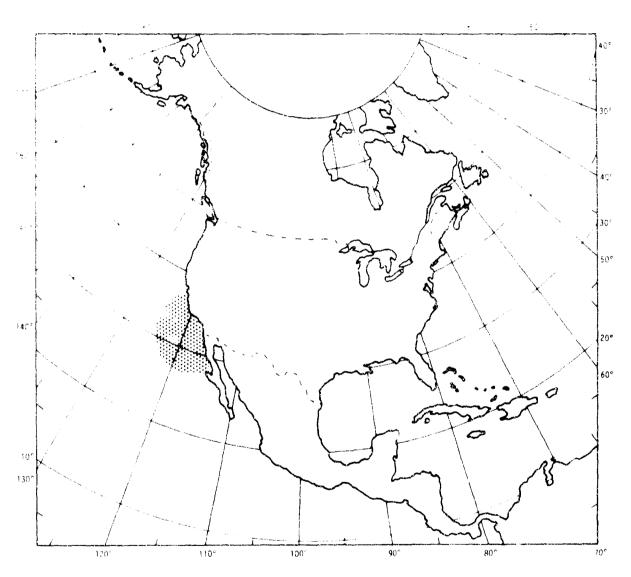
AMO #66-ONR, Woods dole Oceanographic Institution-Research on Gulf Stream,

- A rea = Major Currents of the World
 X, Y Spacing = 1/10 or Maximum Stream Width
 Total Observation Sides Required = 600 (Estimates)



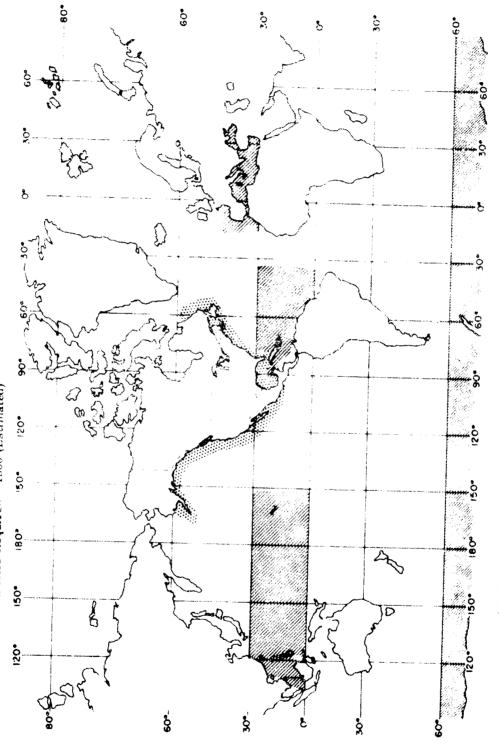
AMO #87-ONR, Nova U.-Measure of velocity and mass fields in strong currents.

- Area = San Diego to 300 n. mi. Out in a Circle
 X, Y Spacing = 10 n. mi. or Just 1 Site
- Total Observation Sites Required = 1



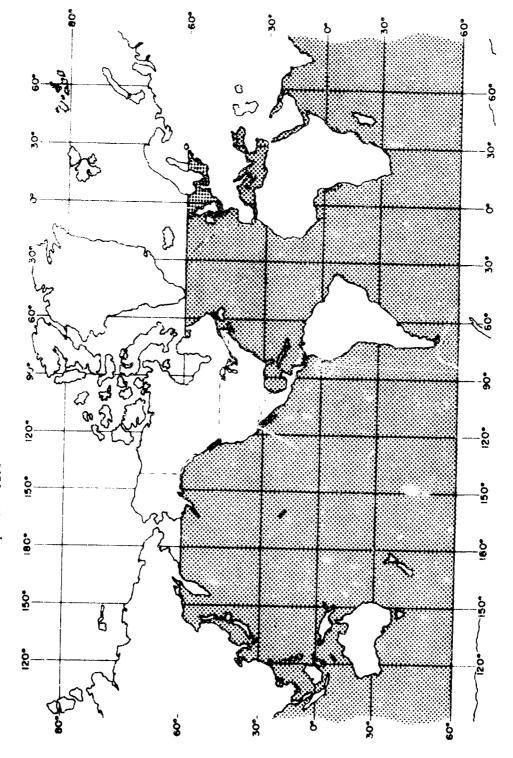
AMO #88-USN, NUWC-Research on underwater sound propagation patterns.

- Area = CNA Out to 150 n. mi., Gulf of Mexico, 0 to 30° N and 150° W to 126° E, 0 to 30° N and 35° W to North America. 30° N to 45° N and 15° W to 40° E, Plus Antarctic
- X, Y Spacing = 500 to 500 n. mininall areas, 30 to 60 n. min, 30 to 100 n. minand 1 n. minin Special Locations Total Observation Sites Required = 1500 (Estimated)



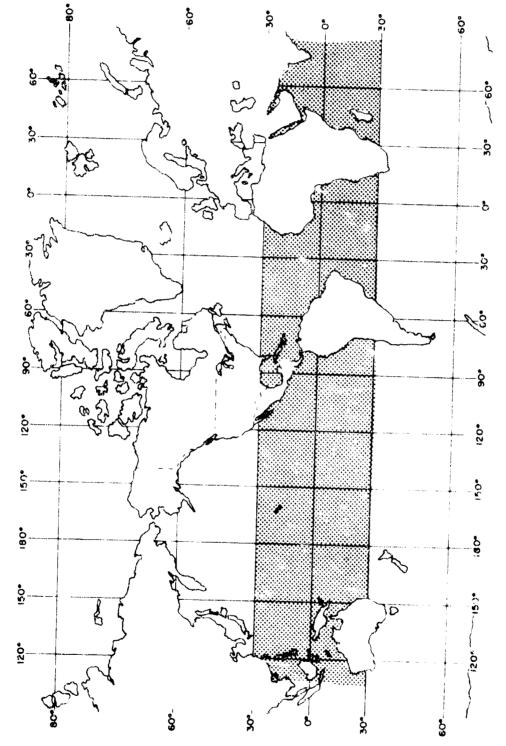
AMO #89-USN, NAVAIRSYSCOM-Develop techniques to support NWS.

- Area = World Oceans X, Y Spacing = Varies More Intense in Strong Wind and Current Gradients
 - Total Observation Sites Required = 1200



AMO #92-MSF, MIT-General circulation of the atmosphere and oceans.

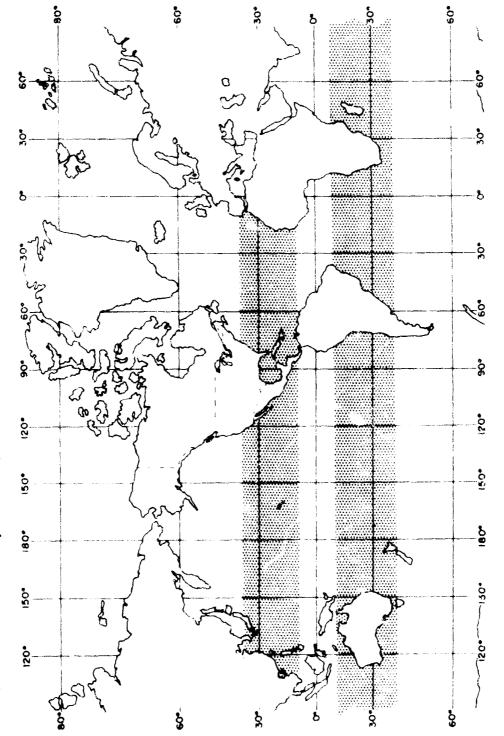
- Area = Tropical, Subtropical and Mid-Latitudes of World Oceans - X, Y Spacing = 4 Sites in 4 min. Squares Scattered Throughout Area of Interest - Total Observation Sites Required = Unknown



2.MO #93-NSF, MIT-Research in internal gravity waves.

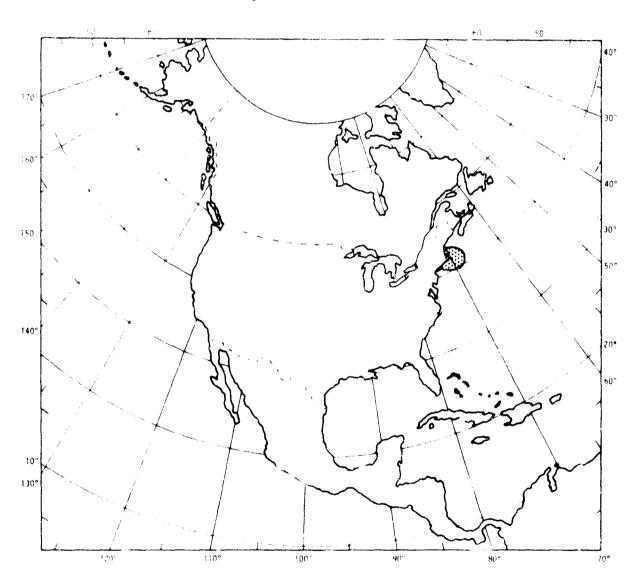
Legend:

- Area = Mid-Latitude of World Oceans
 X, Y Spacing = 30 Sites in a 4° Square, 600 n. mi Between Squares
 Total Observation Sites Required = 500 (Estimated)



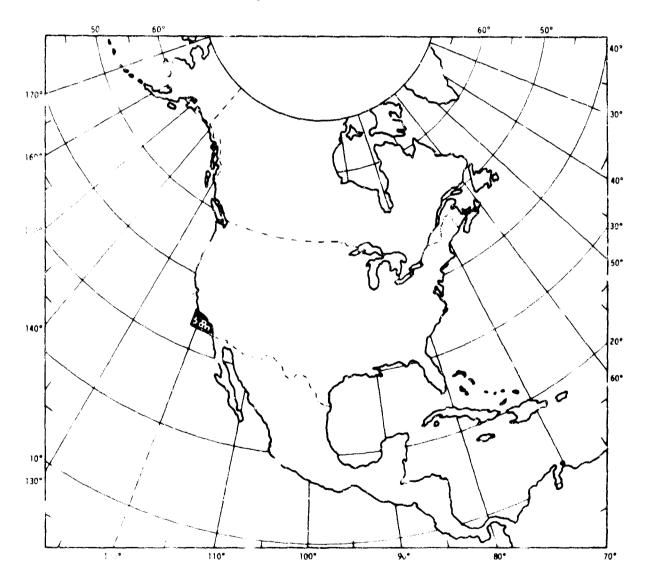
AMO #94-NSF, MIT-Research on Rossby waves.

- Area = Buzzards Bay Area
 X, Y Spacing = 1 Point Only
 Total Observation Sites Required = 1



AMO #95-NSF, MIT-Research on air/sea boundary layer.

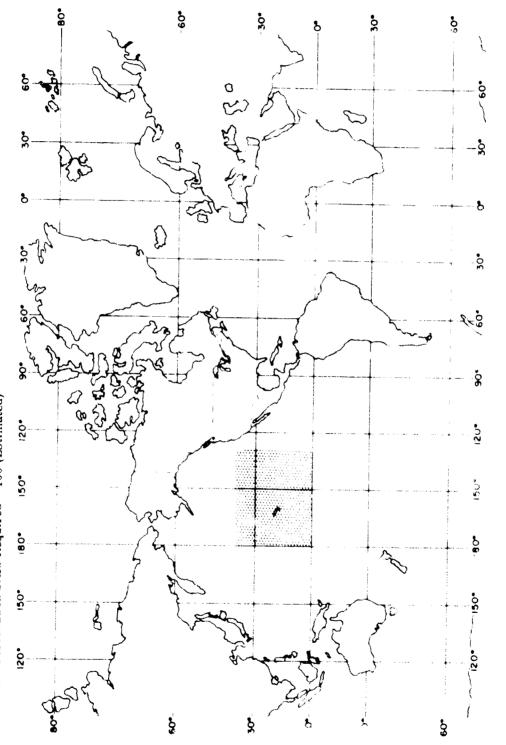
- Area = Vicinity of Santa Barbara Channel Islands, California
- X, Y Spacing = 1 Point Only
- Tital Observation Sites Required 1



AMO #97-Nava! Civil Eng. Lab.-Site survey for manned underwater station.

Legend:

- Area = Pacific 0 to 35° N and 130° W to 180° X, Y Spacing = 60 n. mi in Major Currents
- Total Observation Sites Required = 100 (Estimated) 500 to 800 n. mi Elsewhere



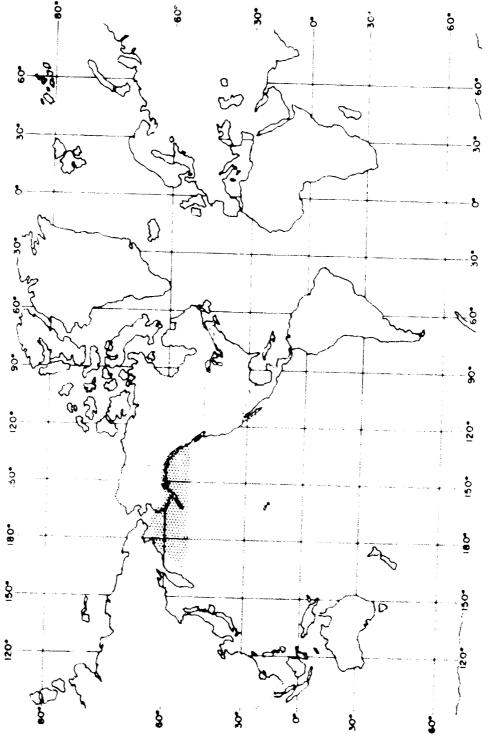
A MO #98-BCF, Honolulu-Basic water mass studies.

; egend:

- Area Estuarles, Cont. Shelfin (F. of Laska, Bering Sea, and Dec. Locan Nof 50° Nund Eof 165° E. X, Y Spacing A Few Miler in Estuarles

300 to 1000 n, mi in Deeper War is 56 to 300 n. mil in Coastal Waters

Tatal Observation Sims Required 77



AMO499-BCF, Maska-Research on environment of fish in Alaskan waters.

APPENDIX IV ASSESSMENT SHEETS FOR 1968 REFINED STATEMENTS OF DATA REQUIREMENTS

Part A Operational Activities

Par B Research Activities

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

I TENTATIVELY PROPOSED NOSS SENSING CAPABILITIES	LY PROP	OBED NO		NG CAPARI	LITTES														a a	P. V. send 20 Aug 58	A 04 5.8
\\\\\\\	Para meters					ð	OCEANOGRAPHIC	PMIC								Z	ETECRO	METEGROLOGECAL			!
/		Carr. Car-	Cer	1	possed	WATER	W press	Water W press Ambient Andrient Trans-	Andriant	Trans	Water and	Wave measurements.		٠ ۲		Atmos.	**		di Januari Di Di D	Wind Wines	741061
Characteristics	30	## -	dir. append			DE R	(depth)	lagta	POS MA	parency	¥	g.	Dir.	or no	- F	ргезя	point	latton	\$ E	÷ ,) digital (in
Geographic location			Deep Green (80°H	Deep Orean (80°H to 60°E) N. Atherica. Const out to 400 n. mi	A Attention	Comment on	K to 400 n	Ē					-								
Vertical Par	ž	200	Service to 5000 in depth	9							Surface					Top	thungs ma	Top of hung must to sw face	201		,
Pare (Syr 80A)	ð	8	0.00 0.00	33 0	4500 %	3	o to 10	. \$ to 0 to 10 0 to 2.0 -80 to	-80 to	0.00	oro	ot -	010	140 0152 010	0 60	800 te	01 57	800 to -25 to 0 01 to 0-12	0.12) tc	3
-		.078	10 icts	42 5/00	5800 tps 40°C	40°C	Det.	by/m	-26 dh	70%/En	# 00 z	40 PMC	340. 60.0		\$ 	E 86	40.0	40-C 5-04-34	E E		360.2 E X X
Max error		. 2	0.03 Its	0.03 bts 6.01 0/00	4	2.100	0.1%	14	•	8	0.2.0	0.2 fb 0.1 eec 5.		0.70	01 KV	01 KV mb	0.2°C 13	1.1	ia i	÷4	÷.
(8-91 BOA)	_		St 18								or 104 or 14	- i	~~			:			e e		
Derafton of the	8	E E	red troat	Mast. or Short parted avg. (Represent	entranementan	ê															
	Χ.Υ	N 50	5 606 x m/100-150 B. MA	-150 B. md									·								
interactive	2	20 80	IA PBO Lee	28 Ser. IAPEO levels (+ near bottom)	hottom)			2 levels		,	Series										
	'n	S Error A Error	l.																		
Ob. synch. [X,Y, (2) .c min, (1 min)	X.Y. (B)	1C 201	, (1 m(n)																		

Congrapht incodes	and the same	3 Reco	TRIT ATER	3 Recovery Areas in Atl., 5 Areas		WALL RADOV	and 2 Lamer Recov Lines in Pac (Recov. Areas - 480 n. mi Diam.)	CON. ATMAS - 46	30 n. mí	D(mm.)						
Vertice layer	į	- J			346			en en	- S		+	3	Sıc	Sfc -	-	
1		0 to	0 to	20 S 20 S 20 S 20 S	0 to			- 8	- % - %	1 to 0	0 to 0 to	9 0	300 to	9- 12 10 /br	0.09%	
Mestamen orror	1	10.	474 6.0	3 %00	1.5 · C	၁		1 th < 15 th	-	2 1 MBC	36.	0.3°C	B. 3 . &	0 01 (n /hr		5
Derasion of ob	8	10 min	10 min 10 main	f min	S nata	a		11.	10 min	 	min 9	aju	la et	fnot	E S	
	K.Y	£002			#00# IB	18		2 2	3600		+	***************************************	200	200 1 m	-	
Sa mapillag Internativ	2	₹			N/A	ļ		z	N/N	++-		1	* Y/X	* .	+	Ī
	1	1 to 3 hr	I to 3 hrs during operate farm when no notivity	T C					++		-	1		+ +-	· · ·	7
1	X, 4	10 mts		1	10 325	9		31	o rata	++	+	₹	16 all p	MCM 9:	ļ .	. T
1	2	N/A		•	٧ ×			2	4/2				9.2			:

RESULTS OF ASSE

Requirements fully met:

Designments surdably mest and why — All rectairs meets limited in 2 shows would by most with the exception of

The 200 m milk, y spacing: Tencative "system" has imitial spacing of 600 n mi.

The requirements for i (to 3) hr ob during operations — Could be mest may a minor "system" operational change "System" expected ' have sewquate (lexibility

Requirescents not most and why: Total Cloud Amount: Judged bether done by other uneans
Rawinsche Peter (P. RH. T. and Whal), Netractive Index, and Visibility. Considered beyond 5-vr hung SOA

¥ F

REPINED AMO # 1 RESCURFMENTS (Continued)

Parameter		Total cloud	
		a may come.	
Geo. location	4	Same as page 1	
Vertical layer		Total atmos	
Parie		01/61 04 0	
Martinum error	101	304	
Duration of on	8	l mila	
	X. Y	200 n mi	L
Sampling intendity	2	N, A	
	raj Paj	8 bri	
1	X X	10 main	
·	2	K/A	

. . AMETERS CONSIDENCE BEYOND THE SATE STATE OF THE ART FOR THE TENTATIVE A PHOFORED DATA BUDY SYSTEM

Parameter		Refractive index	Vistbillty	Ka vinsonde	Re stasonale (R. H., denetty, uir temperature, air preceure, - wind telocity)	pressure, - wind refority)				
Geo location		Same at , age ?	1.2					•		
Vertical layer	_	9fc to 45 000 m						<u></u>	**************************************	
Paragra		50 n to 350 n	6 to 20 m	25						
Maximum error	3	3.0 5	400 m	3						•
Extration of ob.	ام) min	1 arts	77,00						
	¥. ⊀	200 n mi						•	•	•
Sampitag Intensity	2	150 ա	1006 m	4.16, 49, 390 . ea : 00 m						
L	Time	6 trrs						-		
4000	۲ ۲	1 14					•		•	
	,	3 brs								

# /	Perameter					7	OCEANOC RAPHIC	\PHIC							-		TTEORY	MITTORNIO DE LA 187 A 1			
/			Cerr	So Herto	3	Water	Water W press Ambient Ambient Treas-	A moterat	Ambient	Trans		Wave measurements	ents.	Air	Abroa	Atrona Atmos.	ě	Dew Inso	Practic	W. m. 6. m.	
Characteristics						Î	ğ	Ē	BOILE	BOILDE PLICEDERY	耄	Por	ā	of the case	alect	507.0	Georgian	e com	ŗ	*	CST Spectical
Chagraphs lession	_	Ö	N.09 6	Desp Come (60"N to 60"Syn. America	A ABOUT	a Const o	La Coast out to 400 n. mi	is											-		
Vertical layer		and a	Marriage to 5000 in depth	94.5		-		-			Surface	١.				,	a second	To of bases meant to market			
Rauge (5-yr BOA)		0 # 6 %	0 to 0.25 to 0 to	6 to 42 0/0 £4	4500 E	-5 to	-5 to 0 to 10 ⁴	0 to 2.9 -80 to ty/m -20 db	-80 to	0 to 70%/18			0 ts	1 to 0 to 25 to 0 to	9 1 0 2	60 to	9.5	60 to 25 to 0 03 to	4	ā	
Mex error (5-yr 80A)		•	0.03 kbs	0.03 kts 0.01 0/00 1 tps or 1%	š	9 0 01+C 0 1%	0.1%	#	3.9	Z.	6 1 0 80 1 70		ļ.,	010	\$	91 f 91 kv 9 mio 0.2 r 13	3.70	: 22		:	1
Deratton of ab	 	1	Been per	but, or Short period avg. (Beprenauta	apromousis II	(BAS)	-		Ţ				+	-	~~				1		•
	×. ×	# 000 H	2 600 a. m4 180- 150 a. md	150 a. md								-	-	1		1				,	
	2	20 20	A PBO love	26 Sed. LA PBO levrade (* senur hottoen)	hottoer)			2 levels		-	Burface		-							1	
	97	un year,	£				-		-							:					
(3b. syneth. X.Y. (2) 10 min, (1 min)	C. T. (B)	10											+				1			i	

Included Measure-spects of Swells

IV-5

1 REFINED AMO 9 2A MESQUINEMENTS U.S AIR FOTOS (AWS).-Support Mass Def Westors and Tanden RITT (S or Fraits & CO.)

Opening the boardon	Personal Com-	Ŭ N	net South	K 22 03	Only Count South to 25 "N and from 9	30.W to 8	10.W to 84.W. plan 5 Specified Locattons in this Arme	Specified	Locattene	in this Am	*		-	i I		-	-			
Verticel Layer	Ĭ	Se to S	Me to 5000 m depth) H							3			-	-		-	-	-	.
		2000	2000		+									-			-		+	+ -
		9 .	0 50 10 11 11 11	2 ° 5	5 00 5	4500 to 10 to 5800 to 5800 to 5800	0 to 10	0 to 2 0	0 to 2.0 -80 db 0 to		33 0	3	0 to -5 to 6 to	S	4	940 to 20 to 10 to	150	t 7	019 17, 17	i ;
Mariana orres			80.0		for			7	21/00 · 00 07 04		100 11 001	200	300.	40.	10 kV 1050 mb 35 ·C	2	0 2 پ	2.0 ly/m hr	33.0	15.0
	!	•	or 18	8	8	0 01 °C 0 1%	31.0	28	8	*	0.2 ft 6 1 mec	91.8c		0.1.0	01 km 0 1 mb 1 * (13	100 101 %	₹ ? .}•		·c	÷.
Derration of ob.	8											+	+	-		-	i +	10.01		E - -
					-	-	-			1	1	+	-	-						
	X.Y	160				-	-		-			+	+	-+		-			+ - 4	÷ ;
		1				+	-			-		-	+		-		-		L	; -
1	7	38			IA PRO	-					1	-		-	-	-		•		
		1			i		-		T	1	√ /Z	+	+	-	-			- 4	_	
	Ļ	3 km										+	-	+		+-		* 1	+	
	,				+							+	-	-	-		1	1		
9	¥.	10			+	+				† † 		-	-	+	+	+	+-	+	+	•
	2	V/X			1	-				+	1	+	-	-					+	•
										1	- ≺×z		+	-						

I RESULTS OF ASSESSED

Roquire ments fully met: All requirements listed in 2 above.

Anquirements presently nest and why

Augustements set ment and why. Rawinsonning Data (P. R.H. T. and Wind), Propagation Loss, Befrichter Index, and upper-sic Visibility. Considered beyond Evrobium Sola

ONE I ARE	PARRAM	CHE I AREA PARAMETERS WAY IN QUESTION FOR THE	ESISIS INDIVIDUAL CONTRACTOR OF THE PROPERTY O		-	The second secon							
Parameter									-		-		
Ges location	ğ		+		-				T .	7			
Vertical layer					-			-				ļ.	
ì							*** ** *** *** *** *** *** *** *** ***		+-	-	÷	···•	
Martenes error	ă.										+	:	
The state of ob	8						and the contract boundary of the contract of				-		
	X. Y				The same of the sa						-		
The state of the s	2										; -+		
~~	å										:	. •	
8	×		1	-	+		The state of the s			+		:	
	Z			-	-			At 2: 12 decrees the contract of the contract				:	
- The state of the			-					,				• • • • • • • • • • • • • • • • • • • •	

Per america		Refractive	Visibility	Rewinsonde	Propagatica	winecode Propagative	The state of the s			-
Caso terration		N Calf of M	1		1059				•	
Vertical layer		Mrc to	Me to 7,000 ft					:		
2		025 03 05	3	926	/ (1) 22 03 0					
		5	2		i i			+		
				INIC STEE	€ ∴					
Duration of on	8	10 mm	10 m th	P16	10 mtn				:	
	×	150 a. m.			1					
Bampting intensity	2	500 ft	3000 11	1000 ft	1000 ft				:	
	T I'E	6 ars	6 hrs	é hra	6 hrs			-		
(# #)	×	Io mi	10 mts	Li who	10 min		+		٠	
	2	1 Bits	chan .	e e	- min		•	:	•	
					7					

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVELY PROPORED HINE STREING CAPABILITIES	LY PROF	CHED HI	THE STATE	THG CAPAB	RUTTES														ć	}	:
£	P. C. Bertera					3	OCEAN RAPHIC	1 PHIC	-		-		-			1				Say V Date and	: :: :: ::::::::::::::::::::::::::::::
/		Š	Carr		1	1	1						1				בי ז בי יאני	ME TEOMOLIA, CAL			
· ;	/	ŧ		The street of			WEST WORKER AMBIECT AND INC. Trans	A total erst	Ž C	Trans	E PAR	ave messurements.	_		Atmos Atmos	Atmos	Dew Jone) out	Prento	9	
Carrente						Ì	•		5	act a parency	£	Per	J.	de a	e lect	press	#2 6 00	<u>د</u> د ع	£	Ą	
Gespraphie benefice	•	•	è	10 60-5y	V vaerios	S COLAR O	Deep Comma re. Y to 60-5/N . smerican Count out to 410 n mi	5			-		1				1	T		1	-
Vertical layer	ŧ	and the	Surface to 24 . m days	1	11 for 1 and						A Line		+								
			1	-												6	Decog min	Life of Duck mast to sarface	Ł		
i 		3 ÷	9 9	10 10 420/	2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	3 4	-5 to 9 to 10th	0 50 2 0 -07. (5)	30.65	 		6 k. 150	0 11	01.0 02.52	91	\$00 to	25 10	25 [0 3 0 3 0 1		 3 c	
				3	ļ	į	1	1		(2)		AN (1) 100 -000 -000 -000 -000 -000 -000 -00	, ,			GE 650	0.0	E &	1089 mile 40.4 2 0.13 ml 10 3r		(50.00
18 47 80A)		,	8 8	or 1%	1	Ç	*	<u>*</u>	₽ es	*2	# <u>\$</u>	92 ft 9 1 sec 5 0 1 C 0 1 kv		9	\$	Î.	0.2 4 13	=	ž F	······································	ģ
Derakan if &	ŧ	1	Post par	best. or Short perfect avg. (Respresses		Î Î				-	T			-	- 1		-!		e .		
	X.T	*	\$ 600 - my 100 150 a	1502						1 1		-	+-				1	i			
	7	7	IN PRO Les	20 Sed. LA PBO Serveda (* meng bufftom)	bof toem.	-		2 10 0.18	-		Berfans	-	+		1						
	F		•										+	1	!	- 1	1				-
Ch. symme. X.Y. (2) 10 mile, (1	X.Y.O	1	1																		•
			-																		

TOTAL LINE AND A SECOND SECOND	COTATA DI ANTO IL
Air Force (AWS) Samoort Western Miss.	
RODUNDATE U.S.	
1. REPUED AMO + 28	

STATE STATES	Waters - 1 4th Offstore from Vandesbeirg AFB			The state of the s
Vertical layer		Sec to	1 20	
		12 ft	72 ff	-
}		-25 to	25 10	
Maximum organ		J-85	J•0•C	2008
The state of the s		ي _	3. 0	
Derrator of ot			-+-	**************************************
X,Y			18U	1
		sate &	3 74	
	The state of the s	-+	- +	•
1		-	12.8	
<u> </u>	(Probably varies)		1 8 N	aŽ •
A. K	THE OF CASE	· · · · · · · · · · · · · · · · · · ·	Stated	
7			10 min	
		: ! . + ! ! !	* · · · · · · · · · · · · · · · · · · ·	•

Loque remembs hely men

All requirements listed in 2 above. The 3 required locations are all 1 n.m. offshore and listed in the near shore region not included in the behalfshore at this time. In addition the fine X.Y specing of the 3 pts would be far too stringent for the 100 n.m. CNA spacing which starts 55 n.m. offshore. Departments partially nex and why

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

Chrospotence						CKEASCKARAPHIC	<u> </u>							7	The second of the second	. 1. 11. 1			
2		5]	Carr Chart Minds Street] [Service A	A makes of	Print Me	1.00	# #	The press Ambier Combined frees American base pressure for Art Combined American Combined Com	- 2 m	* 1 m. s	4 t Atman Allian Swa for terra, pront lating	¥ 5	Sow Selection	<u> </u>	* 9 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	* * *
Companyed beautiful Daug Com A 48-4 to 60-67 A markets (seat on b) (50 m)	20.00	X -6 V 7	THE REPORT TO BOTH A SECURITY.	A man hou	1 (m st	4 60 + 10 A	30.			1		-		1	1			-	
Yermon layer	Aprilme to 1464 at days	•				:			-	Surface				*	(t	I so at the my mand to soother	,		
W & 24.41	0 to 1 to 15		3 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	S S S S S S S S S S S S S S S S S S S		5 (2) (1) (1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	A CANADA	•	6	# # # # # # # # # # # # # # # # # # #	A STATE OF THE STA	* ;	3 : : :	32 11 2	3.0		ř	ź	
# 4 4 4 C	<u>* 3</u>		20 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	å	· · · · ·	**************************************	* · · · · · · · · · · · · · · · · · · ·		, T				<u>.</u>	ż			: : : : : : : : : : : : : : : : : : : :		
Christian at the		T. L	last or thenry period by Supremelastic	To see a see of	, i		•					-	-	1	·-•	•		al	
-	- 1001 - mifer 1001 c	A.A.	136 .																
	**	1	TO BOX LA PARC LANGUELS ! MONEY BOXES CO.	OKE CE			# PA # 2 1		•	* 147.21		+- -							
4		:					•		•			. ,							
A 7 (2) 10 mm : man	1	í										•							

THE PERSON NAMED IN	(. logie.					•						
Vertical isper	Print	.))	<u>.</u> -				نو سنهم	. 1	3 (6)	,	er de
	•• • ••	3 to 5		5 to 3		en de la companya de	7 Co. 10.	3.0		3.00 E. 2.10.0	······································	· 22 ·
	-	, <u>"</u>		· ·	.	•		50.	•	+ + + + +	•	•
Caraca A &	•	: : <u>अ</u> •	• - · · · · · · · · · · · · · · · · · ·		: :		+ lavi	* *		frat test	٠	
er er seine		7 6 8 X		Acres a	* *	* 7.7	4 90 8	· ·	*	•	: •-	•
	•	*		•		•		• •	٠,			
i c	+ ···	12 hrn	•		*	•		++-	, 1	A	,	• •
* 1	•···•• ·	300	*	A diam	•••	د نید	30 July -	• •		· Bermin Serven		
M		\$				•	•		•		+	•

Fig. 1.75 (of Antichaeler)

Requirements buly uses: All requirements listed in 2 above

.

THE DAMES A RESIDENCE OF THE PARTY OF THE PA

***************************************				eren en e
· · · · · · · · · · · · · · · · · · ·				ener i 🕡 i dik i u 🛊 i ya.
• • • • • • • • • • •				*** ** ** ** ** ** ** ** ** ** ** ** **
		- -		ere 💠 zv.
			·	- -
	1			
				·•• ·••
	•			· · · •

Parameter		He witnessente		.			-				-	-	+ •		
· · · · · · · · · · · · · · · · · · ·					• •	•		~ *		÷	• • • • •		14		
cortheral tayme	: 1	# 20 A				P-1			# #			#5 max	*	.	
* 2		3		·	• • · · · · ·	• • • ·		• ·	· · ·	÷	-	•	re d	. 🛥	
Mariana err m	H L	3			*	••••		. .		· +··			-	•	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	:	1						•			t				
:		# R R R			* -					•				٠	
Second Second	. ×	The state of the s	•		1 .	•		· .•		•	•	*	1.5		
				:	•	•						•			
4): 2:1 man			•				•.					÷	
	7	A STATE BOOK SERVICE AND A STATE OF THE STAT				•			•	•		•			

CONTRACTOR AND CONTRACT AND AND CONTRACT WAS AND AND CONTRACT OF CONTRACT AND CONTR

Paris modern	Transmission of the			-	Hara Triber		:						•	7. T. A. A. A. A. A. B.			
The receipt of office		As a company of the c		3 7	146	Americanic	Total California	Towns Comment		Market Ambornt Company Company April (Market Market) (Market) (Mar		A Section 1. Section 2.		100 mm 10	: :	11 23	* *
THE PROPERTY OF THE PROPERTY O	, 1	V 8. 2 1 21 1. 22	Valuation of	* * * *	A 14, 450	Maria Caragonia agus		-	4	•	-	+	*	-	-	-	
Variated layer	Letter 5 XIII												•	,			
3 a 4 4 5 5 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5		8	3 8 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	21		·	*	ं - १ - १ ह		į				Í			
Man verent		And the second of the second o	4		- "	· I	ų.			· ·	•	•	7	- T			 į į
Carrain a de	Laure or Money.	and the community of the property of the party and the	diger temany to the	. <u> </u>	•												
*	** *** *** *** *** *** *** *** *** ***	100 100 1															
		20 Mg. (A 19th) persols make continued	waters.			***		•	1		10 A 10 mm pa						
				÷							· -						

			1				•		(F								
(Begrupatic London	· branches		4 3# W.	STATES OF STREET STATES OF STREET	有一年 小學									•			
Tertification and the second	Ĭ						3 0 -		2		-	*			*	*:	٤.
į			3	s								* * **********************************	-	•		·. · ·	•
	*		1 5		•			٠	2 2. 2 2.	•	š			-	-		,
* * · · · · · · · · · · · · · · · · · ·	ý T			× 74		, mades	÷ .	r		-		· ·			,	. 4	
	in	Side to Autor mas a (A)	\$ 4 cm	, (w.) »	•	•	*	¥ .	•	٠	v		•				
7	•		TANGE OF THE STATE		. •	* **	•					1					
1		Programme and the second of	e Š.		*	.5	٠			,		,** ** -= .					
				1		• 72			*			- • - • - •			,		
4		Z Š		T.	•	8	•	•					,			٠	
10 m		270					4	,		21					÷	,	
ALBERTAL C	A A MARK					•	4	•									

And the seminary feel of the seminary and the seminary seminary of the seminary semi

Secure requirements have meet when

The form of the company of the contract fraction of the contract of the contra

ASSESSMENT SHEET FOR REPLINED DATA REQUIREMENTS

1. TENTATIVELY PROPURED NDSS SENSING CAPABILITIES

£ _	Parametre				Par Commence of the Party Street	1	OCCUPACION DATE	Total C											¥	Tiesd XO	Revised 30 Aug 63
/		ļ				,	Series S	Ac 134.								Ä	ETRORO	METEOROGRACAL			
1	/	dir. speed	dir. soon	Charity	Pro l	Water	Water W press Ambient Ambient Trags. Wave measuraments 117 Attents Atmot Day Itan	Ambisat	A unfoteent	Trass	Ways m	Vaye mentury wents.			thens	tmoc	3	Inde	1 7 20	9	
							No.	Š.	notes parency	Pa rentry	ŧ	Per	ĥ	į		cher' grees po'at lation	po, at	lation	<u> </u>	į	thr inpend
Compressio league		Design O	Design (40°)	Deep Open (40-N to 60-6) American Coast out to 400 s. sel	America	a Count on	A to 400 r.	en entre formande arrando de desarrando de promisso de promisso de la companya del companya de la companya de la companya del companya de la companya del la companya de la	become and	-	· and		er an	-	men nember	1	- Control of the cont			_	
Vertical layer		a training	Beritan te 1000 m depth	- Carps											:						
Read Gree Roa	100	1	200		۲								_			ਜ਼ ਹੈ:	Duncy ma	Top of busy mant to surface	\$1.00 (B)		
	ì		3 2	90 % 7 % %	2 8 8 2 8 8 5 8	3 5 5	-5 to . to 10° 0 to 20 -80 to 6 to 40°C pet 19/m - 20.45 204.	0 to 2 0	-A0 to	2.06.7	0 50	S	3	23 to 0	9	io to	25 to	03 19 0	0 to 1 to 0 to 25 to 0 to 8 100 to 25 to 0 to 800 to 0 12 0 to 0 to	at o	0 (5)
Mex error			C. 88 174	6.63 tas 0.01 0/20 1 fts	T	21.00						2	Ř ;	-	£	£	ن. ا	2 0 ty/m	1000 mb 30°C 2 05/m in. br 36°C 160 km		150 kts
(5-yr BOA)			£	3		,		ž	i i	ř.	0.2 fb 0.1 mmc 5. 01.°C 01.kv 0.1 mmb 0.2 ec 19	0 1 400	3.	<u>.</u>	01 kv	12	.3.20	<u>*</u>	0.01	7.	XX
Duration of ob.		F. S.	Pear par	Inst. or Shert period avg. (Representative)	presentati	(82	-		-1		10 100	± .							In. Pr		9F 3G
	Α,Ψ	≥ 600 m	\$ 606 m. me 100-150 B. ma	150 B. M						:											
To see and	Z		A 750 low	26 Std. LA PSO loveds (* sear bothom)	KORBONEN)			2 beveile							:		:				
	F	and Character	F								40 L		_		:						
Ch. oynech. X.Y. (2) 10 mile. (1 mile)	X.T.B	2		-				The state of the s					-		:				•		

2. REFINED AMO # 19 REQUIREMENTS BCF, Washington, D.C.—Bysopisc Climatolog

				Office of the contract of the			Of the second of								
Desgraphite location	horation	Pacifi	e Count 3	10.8 to Alaska/F	actific Con	tet to 160	Pacific Coast 30-8 to Alaska/Pacific Coast to 180-E. 30-8 to Alaska				-				
Vertical layer		38 55		_	afe to	-	The state of the s		+						
		628			\$25 m	 } £			3		· -		-	_	-
1		0 %	0.08 0.08 0.05	0 to	3 5	2			25		:		1	-	
Martmen error	Tree	İ	0.03	0.03 tts 0.01 o.	2	2)			0.09	 ا ا					
		2	8 18 8	8	0.01 C	ပ္			_				÷	÷-	
Duration of ob.	8	01	10 redia	_	10 20	6								-	
		5	97 10 Rs	1	a para	.	_		- 10				:	• :	
	X. Y	500 8	500 to 500 a red (n DO)	(a) DO /	500	5			e e e	-			-		
1		100 20	100 to 240 m. and to CNA	in CNA)	3/	100 to			50010	/10010	· -	;	•		
1	N	3 6		•	IN PRO	9		+		246 n md		i i		+	
	ě	5		•	6 bre				V/2				-+		
8	X, W	30 mela	T	 	9	-		+	6 hrs					-	
	2	o meta			4	1			30 mir	<u> </u>				•	
3. RESULTS OF ASSESSMENT	A ASSESS	1000		1 - 1	1				N/A		ļ		-	←	-

Bequirements fally max: All requirements listed in 2 above. Carrest meterre ment capability of the proposed "system" will meet current transport requirements

Requirements pertially met and why

Constant Pressure Sarface (1006 and 700 mb) Heights: Considered beyond 5-vr bury 5634 Bequiroments and mer and why:

*600 n. milk. Y spacing for truns tentative "mystem" agreed upon during beleven on 2/17/68 with Mr. King. (this was in view of initial "system" requirement. (Givin milhy 238A, 1981, and USK for deep coean).

METINED AMO # 19 REQUIREMENTS (Continued)

REY AREA	PARAM	BREY AREA" PARAMETERS NOW IN QUESTION FOR THE TENTATIVELY PROPOSED DATA BLOY SYNTIM	PITERTION FOR	THE TENTAL	TVELY PROPO	ED DATA BITO	SYSTEM				D,	favineed 20 Aug 68	¥2
Partabeter									 				
Geo. location	1									:			
Ver deal layor	9.							-	:			.	
Respo													
Mazdavina arror											· :	: •	
Duretion of ob-	48										:	•	
	Х. Ұ		7						:				
Stampfort intersofty	2									:		· · · · · ·	
	Time									:		<u> </u>	
de estado	Х. У									:	:	•	
	7											:	

Series artes

PARAMETENS COMBERGED BYOND THE SAYR STATE OF THE ART FOR THE TENSATIVETY OF DECIMENT HAVE A

Parameter		Constant pressure beights (1000 - 700 mb)	betghts		- 							 		
Geo. location		अका क तक प्रवक्तक 1					-		•	•	•	•	:	4
Vertical layer	<i>1</i> 23	Ste to 700 mb						:	·					
Pange		Not stated								<u> </u>				
Maximum error	101	Not stated	ļ —						· :		· ·		•—	•
Duration of ob.	ė	Not stated					and a continue to a continue to		The state of the s			·	 	
	×. ×	Same as page 1							:		•	÷	-	
Sampling intensity	z	N/A											•	
	Time	6 brs									! !	-		
4	×	30 maa		-					:	•	•	•		
	2	20 m2n								:	:	-	•	

ada c m

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

ž _	Para meters						OCEANOGRAPHIC	1 PHIC					-			ž	PLEORO	METEOROLOGACAL			
/	,		Curr	Seliairy	Sound	Water	Water W press Ambient ambient Trans-	Ambitat	1 mbient	- T. B. I.S.	Wave m	Wave measurements.	-	Air	Atmos Atmos	-	3.50	Inst	Precip 1438d	Day of	Wind
Cheracteristics	2	ŧ	9		2	18	(depth)	light.	103.46	parency	#	Per	ă	om e,	elect	F. P. S. B.	tarod	lation	rate	Ę	Peach
Geographic Econides	Consider	O dead	N*09) HM0	Deep Ocean (60°N to 60°8) Ame	America	to Count o	rices Count out to 490 n mi	m.								1	-	1			
Vertical layer	i i	Bartace	Burface to 5000 m depth	9.00							Surface			1 2 1	:	. 6	Pucoy m	Top of bucy mast to surface			
Rangs (5-yr SCA)	80A)	0 to	0.06 to	0 to 42 0/06	4500 to 58.00 ps	to -5 to	0 to 104	0 to 2 0	88 n	9 to 7 0%/m	6 to	23 07	0 to -25 to 350* 60*C			100 to	.15 to	800 to 25 to 8 01 to	0-12	0 \$	0 to
Max error		•	0.03 kts	6.01	1 %	0.99×C	3610	1.3	€ 0	5.7	0.2 ft 0 1 ac	- L	_			Ę	J-2 0	*	0.1 mb 0.2 C 13 0.01 2.		O 5 ktr
Duration of ob	-8	I A	List Line	last, or Smort partod avg. (Represen	epresentativo)	(S)							1	-i		_					E
	X, Y	A 650 E	\$ 600 a ma 1.00-150 a m	150 a m		İ				1		1	+-	1		:	1	1	:		i
A STATE OF THE STA	2	20 Seri	F P80 Jen	20 Sed. L. PSO levels (- Bear battons)	b-Xtors)			2 levels	-		Surface		+							1	
,	r c	e brue bre				-							-			:					
Ob. synote. X.T. (2) 10 min, (1 min)	· · · · · · · · · · · · · · · · · · ·	10 mates,	(a)								:										

Cooprepate Resulter	resettor.	N. Hell	a septim la	N. Hemisphere 4 in Atlantic, 2 in	ic, 2 in Pa	Pacific						-					
Vertical laver	ž.	34c to 5000 m						1	. S. C.			++	*	3fc	Ske	Sfe	Sfc
r St.		0 to	6 1. to	20 to 46 96c	4500 to -2 to	30.00	9 to	f to 2.6) to 2 to		2 to -1	-16 to	900 to	25 to	0.10	
Mariness orror	*****	•01	97 1%	0.53 0,00	3 (78	5.10	··	1.3	0 0		1 .	_	9.5°C	dia 1	mb 0.2.c	•0:	13 66 0 13 x 0 0
Darraton of ob	8	10 abril a						I	0:	in min		+-	Ā	(-)	10 min	=	
-	X.Y	A/N	-		ļ 			+		+	+	-	1	+	-		
;		single pts					-	1	ż	V/K	-	+	T	N/N	*/N	×.	XX
がままり	24	A PSO Levels	APSO Mevels ≥ 50 m from bottom	tom)					X	N/A		++	*	Z.X	N/A	× ×	
	E SE	9 27 9						•	9	6 hre	+ +	+-	1-4	6 hrs	6 hrs		
4	×, ×	30 min						•	36	30 mig	+	11		36 min	Tita salar	-	
	F-1	30 min						1	4/7	- A	+		-	2	1,0	1	tion to
RESULTS OF ASSESSMENT	N ASSES	N. C. W.						**************************************		-	-	1			0 / 4	5.6	

Require mests fully met: All requirements fished in 2 above.

purements particily mer sud why

Be alymetry - Sudged better done by other means Oregen - Encertainty about ob-from basy unattended for long periods. Rawinsonde Data (P. RH, T and Wind) and Plankton Rauls - Considered beyond 5-yr 803. Requirements not men and why

"20 Sto in PSC levels are satisfactory but will degrade adjustable interval samuling of Namen Rottle and std work

REFINED AMO ♦ 25 REQUIREMENTS (Continued)

											マイ・ケード つきゅうしん
P. Beter	_	Ontygon	Bathymetry	 			-	-			
One incutton	ž	Open Station Vessels	n Vessels								Ţ
Vertical layer	Lybr	Mc to 5000 m	Bottom	-					_	-	
Range		0 to 10 ml/3	5 to 5000 m								
Maximum error	e 7704	0.03 ml/l	8 2					-	+-		
Duration of ob-	-8	10 min	30 min	-							
	 K	N/A	Special [custions							-	
Bempling interestry	Z	LAPSO IVIA -	1								
	Time	6 are	V/X								
Ob. synch.	χχ	oten OK	N/A		-				-		
-	2	30 min	Y/X	+							

PARAMETERS CONSIDERED BEYOND THE 5- YR STATE OF THE ART FOR THE STATA THUS TO GOLDGE THE

Parameter	8	Pawinsonds	Vertical and oblique plantities hauls to 266	70e m			!						
Geo lucation	80	Ocean Station Vessels						7			_		:
Vertical inyer		Offe to 100 k ft	Sic to 200 m					-				-	
Range	3 04		Not stated							-			!
Merimum errer	r SCA		N. St.					-				- +	
Duration of ob.	8 6		30 min							-			
	X, Y Special	•	N/A					+-		-		-+-	
Sampling, internally	- prog Z	Std - signif- icant levels	Comer			_				-			The second second
	Time 12 hrs		6 bra			+			-		-		
f streh	X. Y. SOA	 	N/A					+		-	-		
	¥ % 7		X/X										

ASSESSMENT SHEET FOR REFINED DATA REQUIRENENTS

I TENTATIVELY PROPOSED KING SENGING CANADILITES

ď.	Para meters		The second lives of the second				Contract of the second	Charte	-						1				Per	med 20	Parised 20 Aug. 166
/						7	C CAMPANA	7144								X.E.	METEOHOLOGICA	SQCA1			
/	/.	Off.	Off. Same		200	War.	Warst W press Andread Ambient Irans-	Anthent	A machanit	Trans-	Wave mossurements.	SENTE MOI	. SI.		NOG. AL	Atmos. Atmos. Dev Inco.	2.5	E.R.O.	Presch	3	4.00
Charlessman						2		H.S.	98 800	noise parency	ž	Per	- LK	tempt es	eisect pr	press	podnit	Lation		, i	dir mored
Coortische delle Das Chain 180 M to 80 TV American Chair ant to 800 0 m	1000	2	.09	N to sever	America	ES Comet out to 600 a	# to 8.00 a] a			4	+	+		4	-0.4				1	
Vertical layer	24.6	1	Perfect to Chica . And	-								1									
Remote (Army MOA)	4			200		-	- 1	A			Surface					100	tery me a	its it outy meet to surface			
		3 6	10 11 42 0/	Ş	32 90 57 20 00 57	15 to 0 to 1		6 72 2 6	0 € 0 €	03.0	9 to 1 to 6 to 25 to 6 to	ot [200 07 0	20 02	- 	u 10 0 0. 37 to 0. 01 to	103.75	0) to	0:13 6 40 0 40	5 50	A to
Man orror		••	20.00	0.00				1			1007	A# 01) 040 040	•	٥	<u>خ</u>	₹ Ž	۵. پ	0 M/0	is. br	3601	160 kts
(5-yr 80A)	,,,,,		*	8	5		•	<u></u>	€	%	0.2 ft (0.) sage 5:	3000		٠. (19)	* 0 5	9) i z	91 0-00 QE 10 AN 10 0110	10.0	† :.	8.7 6.9
Deregon of ob	8	10 M	Secret pe	bast, or Short period avg. Represented	Cor essented to	(34)		T	A	,				-		<u></u>			18 . 19.		1. 1. 1.
	×	2 800	100	5 500 1 my 109-150 a 54		1			-					****	-						
An impact of	2	8	Sec.	20 Std. 1 PRO (evels (* sear testom)	İ	and the second second		7 lanels		•	And the control of th		-			11					i
	C	6 bred bre	70	*			-	- IX 4418			Sur'er	***************************************	-		:						
(B 774 X Y (B)	4 4 8	4	(1 mate)					1	***	1	1		aran)	:							
																			1		

Cacagongiate benefite	Sept 1	/	nd Section	Statistary Sections - SEE MAP								-					
Variable layer	ž.	er to			-					-	-	+					
		5000 B					-	•		Sfc	+	-	Ü	35	-	-	
y de la constant de l		0 to 360•	3 2	20 to 40 9/00	4500 5500	tp- 30-C	0 to 50003 m	0 % C 0	1 1 50	1 to 2 to	0 000	15 to	9.00 to		010		Ske
Maximum orrur	11774	ė	8 5 2 5	0.03 9.00 3 fpm		.01.C	2 ft or	13	0	1		-+-	dan ben t		366		99 xts
Duration of ob-	8	1	-				200		ıc	or 10% or 1%	14	(L.9. C	0.5 mb	6.2.C		6 6	20 0 C
		10 10						•	-10	10 min			0	-	-	*	Ī
	×	¥ 2 (€	Die along	2		06 n mı f	306 n mi from shore		+-		-		The second	uin ai	To	lumin 10 min	uru.
1		200	each section/	10-33	10-25 a mi < 3	90 mm	300 n r from thorn	, 	! ! ! ! !	+	-	-	1				
(Theresis)	z	26.	IA PEC and levels and	~ pura					-	+	-	-	-			-	*
,	1	4 6	A hr comon to 5000 m	A Process to 500c m					Z		+	1	۲ <u>۲</u>	ત ટે	7	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	· -
	<u> </u>	, x	E, y spacing ;	E) 03 8,440d		Tad ayer	month (cor.	other per month (corresponds to fb)			-	+-	-		-	٠+	
de de	X, Y	30 GLI				and a v.y and			77	+		4		*		•	4
	2	30 1. 11.						A	30	30 min	-		शक्त क	soming.	10.	0 m 36 min	1
D S.T. JAN	19 OF ASSESSED T							•		¥ ::		I	<i>t y</i>	V.	7.	7	-

Beyetrements hely met:

Requirements partially nest and why All requirements listed to 2 above would be not with the everyption of Prof. The fane scale spacing in lines — Tentative system? As initial spacings of the it 00 and 100—100—100 in its

Bithymetry: Autwort hetter done by other means.
Soygen: Invertually about recasurement from according from periods.
Rewindonse: THE TOP And Conserves of the conserves.

11 - 17

Requirements not met and why

.. 20-

REFINED AMO # 24

		į		William to the first of the state of the sta	147	LPT (ARC IN AUR ON
Pertenener		Ocype	Bathy metry			
Gero Acceptore		Standard Sections	Mone		7	
Vertical layer	yar	9fe to 5000 m	Prices			
•		0 to 10 mL1	5 to 10,000 m			
Martinum error	rror	0 03 mL/l	2 8			
Duration of ob	8	10 min	30 miles			
	<i>×</i>	Seme au 1st	Special			
Sampling (at:metty	2	IA PBO etd Sevels	Вошоп			
	T.	Same as lett	A/X			
OF Ayboh	×	30 mate	No min			
	7	30 min	30 male			
					-	

Standard Sections Standard Sections 100, 000 ft	Personer	2	1a. conde	Rawinsonde (Temperature, wind, R H.)									 	
90A 90A 90A 90A 90A 90A 90A 90A	Geo location	8	derd Secta	lone				-		7.	-		:	
80A 84d 84d 84d 8. y Special 10cd 6ad 2 cant levels 2 cant levels 12 2xx	Vertical layer		80.00 E							-		-		
90A 944 944 10c-tstons 2	Range	Ş	-									-	· ·	7
2 Security Special Security Special Security Sec	MAKIENCE ETT.										-		 	
X. Y Special locations 2 dat input 2 dat leels lime 12 hrs X Y XOA Z SAA	Duration of ob		†										- +	T
2 360 - mpn/h can levels lime 12 hrs X Y XOA Z SOA			ia: Lone						-		:	* - 		
Tune 12 hrs	Sampling interasts		levels						-	+				
X T 504			*	The state of the s		74. 200			_	-	-			-
ALX.		3 1	•	•	•		1				· - +		:	
	-	4r% /		•	• · · · · · · · · · · · · · · · · · · ·						-			

7 E

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

I TENTATIVELY PROPUSED WORR SENGING CAPABILITIES

/	Parameter					0	OCEANOGRAPHIC	PHIC					-		-				Re	Revised to Aug 168	Aug. 68
<u>/</u>		Carr	5						1							≯ .	E.T.E. XX	METE MOLOGICAL			
Characteriation	/5	ŧ	5	Mainty	Deed	200	Mater w press Ambient Ambient Trans-	Ambient	Ambient	Trans		Wave measurements*		717	Atmos Amos. Dev Inso-	100	3	Inso-	F-9010		Wand with
									5.	parency	Ŧ	Per	2.5	à me	elect	ş, G	pent lation	iation	Ę		Speed
Cooprapiale location	Score El ce	0	-09: Was	Deep Ocean :60"N to 60"S. America	(America	a Count or	La Consat our to 400 n m	Ē			1		+	1	+	7	1		-]	
Vertical layer	ž.	Bertheon	Burtace to Science depth	1 4000				,					-+								
1	400	1					1				Surface.					Top	Ducow m	Top of page mast to surface	90		
		S è	360 10 Hz 0 12 9/	0.70.7 \$3.0/.00	55 00 E0	5 to	.5 to 0 to 1.74 40°C per	9 to 2 0 -80 to 9 to 10	10 to 6-	9 6	0 to	10 010 -25 to 0 to	91 0	25 to 0) I = 1	13.55	*() tu 25 tu 0 01 to	0. 2	0 10	9 to
Max error		5.	0 03 174	0 03 hts 0 01 07 5 ft.	3	100		1	í	E / E	3	40 mec 360 60.0	9 \$	<u>-</u>		Ê E	7.04	10 to 10 to	in., hr	÷	160 kts
13 gr 30A			*	8	\$	¥.10	-		€	Z.	1 2 ft	9.2 ft 0.1 aec 5.	_	ن آجر	0 1	qu. o	02.6 13	1,5	0.31	:	2 8 8 4 8
Durados of ob-	8	1	Sort per	last or Short period avg. (Representat	Ppresenta t	146			7	7	or 1.75 or 1.1	2	+			:			35		or Si
	×. ×	600	100	5 600 n mg/100-150 n md				1	1			1			:			f : :		-	
later of the	2	2	S PBO ICE	20 Std. LA PBO levels 1- Ges. bottom)	bofforn)								-							i	-
	5	sta Series	5					/ levers	-		Surface										1
Ob synch X,1 .2 10 min .1 min	X . B	10.	i						:						-		:			1	
													-				1	: :			

Includes Measurements of Section

KENINEDA	25	* REFINED AND #25 REQUIREMENTS S. Const Guard-Ice Patrix Monitoring	73 C.S. Cu	st Guard-	ice Patro	Montor	₩u.										
Geographie I	location.	Chographic location Grand Banks - 39"N to 50"N, 42"N to 55"W	38.8 to 50.8	1, 42 4 to 5	W-81	(SEE MAP)	P.										
Vertical layer	ŧ	0% >MC			0, 38		· ·			ļ-	-						
		2,000 E			5000 m				Sfc			9			L	-	T
1		360 6.1 to 20 to 360.	20 to		30	010	0 10			2 to 0 to	-15 to	01 .6	9. 10 25 10		1	! !	
Maximass error	1708	eta do	of itte		+	8	2.0.5 m	+		25 sec 369*	40.C	10 3mb 40°C			.09F		2 2
			3 3		0.13	0.5 %	 M		1 ft or 1	134 10.	10. 0.5.C	1 mb 0.2°C	+	10	1	1	Kt or
Dermand A &	g	16 or	I		10 or		4	-	+ ====================================	-,	+	+	- † - - -	ın, hr			
	×	X. Y (a) 7 (b)			30 0010				s o rodn		•	10 of	1				
		3. S. Y.	-		50 n mi m	2.3		†	+ .			Tur Ac	*·····································			+	
Je mptrad	2	LA PBO std		. J	100 p m i	17.00		 		-	•				+-		
for the same of		levels mear box thear aft medent	ox bear afe a	(F-40-4)	+		1		ا بر بر	•		Ţ'.	+	•	+	1	-
	Ē	(a) 6 brs (corre	beponds to (a.)	/(b) Once	wery two	*Seeks	Time (a) 6 hrs corresponds to (a,/(b) (hoe every two weeks, Feb through it is	+	+		F			•		1	4
	,	जियाज्यक्ती र्रम का		£165	eponde to	(b) in x,	rresponds to (b) in x,v suscing!	1	+		-			•	<u>.</u>	-	
(the syncth	· ·	It sun	1		, and		7		1	1	+	+		• •	ļ.,	:	4
	~	I mir	*	•	+	+-	Γ <u>*</u>	+	- Duru			um o !		+			4
REST. TE CO ASSESSMENT	P A SHOP OF	100000	-	-		+ 1	Ā	-	-	+			; :	+-	•	†	-

RESULTS OF ASSESSMENT

Requirements hally met - All frequirements usted to 2 stew lock (X,Y spellon) category(3) 30 s196 n. miwould be metout to about 200 n. m.

* The time X is a ring and why. All where requirements usted in 2 shows sourcher met with the exception of the first and 2 plus is resided 200 months where. Tentative resident miss mittal specing of 100 to 150 million and the first and the

comparation and most and why Ballitymetter. Authority evident care to other meson

SECTION OF SECURITY SECURITY OF SECURITY O

								-			The same of the last of the la			
Purameter	k	Paties matery						en nomen e					İ	
Cato Northallow			1	•			1	•	:	· ·	-4			4
Vertical layer	byer	Potton						Ļ		:	:	-	:	
Ran ge		a to 10 000 gr			• ·	•	: :			:	•			-
		£		<u> </u>	+			-	+	<u>.</u>	+	-		ļ.,
,		10 34 30 74.					1				+	-	-	!
	>	10 a (A	-		•			-			-		:	
	~	l×sttom.	•	<u>.</u>						-		÷		
	1	ž										-		
	×			•			1	-		+	-	+	+	
i i		20 110		+			-				-	-		

PARAMETE	E P. S. C. S	PARAMETERS COMMUNICURE POND THE SOLE IN	ND THOUST Y	T RIVE	TV JHE VI	R PECH THE	TRATATIV	TLY PROF	YORED DATE	FIME ART FOR THE TENTATIVELY PROPUBED DATA BUOY SYSTEM	15 M 3						
Parameter	Braten.																
(m) Gretten	r + Closs			:	:	•	4	•		:				- i			
vertical layer	•	:						•		:		-			,-		
P. C.			.				· •	· -			+			:	<u>+</u> -	-	
Meatiness error					:	1	+	· -		·.		-					
Program of the				; 			+	-			+	-	1	!	+-		
	,- ,-			÷	:		: •	*	:	•		+		· · · · · · · · · · · · · · · · · · ·	• • • ·	· • ····	
And the second	Z					•		· • · · · · · · · · · · · · · · · · · ·	:		: •	-			· •		
	j						: +	•			ř	+-			· -	+	
÷		**************************************		* }				* · * · ·			* *:	· · ·	,		- • •	*	
1						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			STATE STATE OF THE CASE OF THE			1				. 4	

Page 2

ASSESSMENT SHEET FOR HEYINED DATA REQUIREMENTS.

いのはなるだった。 (大学学者) まじきの まじまる (大学学者) アンドラング・ション (大学学者) いっぱい (大学学者)	E CHECK	Charles Style Market	(第2) これを入業(SILO														Key	Revised 20 Aug. 6P	2
	_	1			:	THE VALUE OF A PRICE			and the control of th			<u> </u>	!	:	Ā	MFT FOROS (#26 4)				
Charmeter coefficie	<u>}</u> *]]]]		map darpeter teght name parties;	A managed	A inchesist.	Ambeen Trans	· ·	Par I'ar	-		trace Atmos		Down Institute		Precip	# 14 14	Wind Speed
-		İ	Dang Chance 600 H to 500 by America Court and to 100 m as	A me stars	is Case a	1 100 m	907	A CONTRACTOR OF THE PERSON OF	Andrew Parkers	-			•				4			
Vertical layer	1	artem 10 3460 m	1						•	Bries		-			2	Trap of themy mant to earther	to sarte	ŗ		
Manage (8, yr M'M)	4 1	2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3 *	3 3	71.04	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 %	28	5 8 -	1 10 10 10 10 10 10 10 10 10 10 10 10 10	01 02 03 E				25 to 0.03 to	3 4	25 to 17 03 to 3 1	n 6 to	6 to 160 Kts
Mar syron (A yr Milk)		: :	8	1	**************************************	<u>.</u>	**	Ę	<u>r</u>	1 1 8 E 2 2			· · · · · · · · · · · · · · · · · · ·	- A 10	ę Ę	- X Z D	•	0 0 0 E	٠,	1 2
Dareston of the	j	i	that or Manet partial and Shapers		į	:				- -		*	-	4	4	-				
H		The same of the same of											,							
-	ì	A 15	30 Mpf 1A PWC Larrycks . men. footbooks	-			2 1000.0			Bertage		-	,				:			
1	· · ·									•		:	,							:
(S) sympt X T (2) 10 mt. 1 mile)	:	(mgm ;																	:	:
The state of the last of the l			The same and same front and from	-		-														

1.00.0 mb 2 21 EL 08" Varian diam's \$ 4 F 10. B e Z 3,50 1 th. 2 th. 5 th. Varies Vi min * Vertea を行うできます。 (1985年 1987年 - 1987 Varies with garyprapale at 1 C mate. RESCUENCE OF AMERICAN REFINED AME? 4 37 Charmanan at al. Vertinal Laper

m ame incent

131143

* 1 * 1

A RICH

A A A A A

All requirements leaved in 2 shows when the variable X 2 and Time analyting thereadles in the CNA and Extra tribled To the A tim bencheter topace Sample revisional bally man

Requirements particuly man and Viv. All lating requirements and arginals and have extracted a supplied of the contraction and the tractional and the second statements and the second se

Mangual restaura and restaura debe and control responsibility and control of control of restaura characteristics and the control of the contr

Practice and the second	,				•]E , 2 → 1 = - × × 4 = ± /	ਜੋ . 						÷	WF 15 - PRINCE A 30 A 2	:		
* OF JAMES) J		3 7		The second of th	THE PERSON	5	where is not supplied from Anne mean interest of the latest the states of the little of the special states and supplied to the	; ž	A C Altera Ctro-		Figure 1 (n = 1)	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		Wand Wand
The Control of the Co	*	F F	×	Total Branch		A.R. 11 . 5 . 7	- Off.	-		The state of the s	-	-	+	And the control of th		1	
A BANK THIS CO.	The same of the same of		. 1							Liter			* *	Tay of Pearly strated to a complete	1.50.0		
And the Sea	۔ پُر پُر		 			1* 							- 4				: : :
Man 473 7 47 36 34	•		2 2 2 2 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5	, ,\$.	:		**	•			· • · · · ·						1
* * * 55 %		1 E	the same lattering. But you to get parting, he were	mr.sees st	. <u>:</u>							- 14				- 4	
•		7	me a martine and								~						
The same of the sa	7	*	The state of the state of the state of the state of	10.00						Surface							
,	**** C ***	•								•							
P. C. Tana Co. C. States Co. Called Co.	9	į									•						

The Artiglished Service Art.	the first can be for										:	,			:		
*		. •	` •			ì											٠
a de la companya de l				-	<i>2</i> •		•								· • • ·		· ·
Mar. 1445	•	•	•	•			÷					•	•	•			
* * * 6***							•	. :									
	150 m 17 14, 175 h 15	•	-				•		ī	,				,		,	
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		:	e	,	\$" -	1 1											
	•	,				1								٠		• • .	
	•	٠,,				* 4 ***			• • •								

Acres to the second of the second

And the control of th

A STATE OF THE PROPERTY OF THE

REPRESENTATION OF SAME OF SAME SERVICE SERVICES

	Practical section of the Beach of the Section of th			The state of the s			* * * * * * * * * * * * * * * * * * * *			
#		P. Mar. (Mar of the "	•	3			٠			: 4
tarthial layer	No. M. Com.	The Company of the Co	*			** *				,
j	# (%) 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1				•		•			•
Managem and arriver	, ž	•		*	• .		•		· ,•	
Barrett & A . ft	2. 2.	• •	<u>, </u>	•		•	# m # 14	*****	o sa nd a	•
	C C Servebbe	about we wanted			•		.			
li	No Receipt		* ************************************	**	·		· •••• •			· •
1	,	****				·			*	. •
. 4.22.4	* · · · · · · · · · · · · · · · · · · ·	1	**************************************	*	•				·	. 44
7	, , , , , , , , , , , , , , , , , , ,	¥	# 79 · ·	· ·	•		•			

	The first of the control of the cont	
	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	
	¥ c	
Marchana server Marchana de de Marchana de d		
The second secon	こう こうしょう かいきょう かいきょう かいきょう 大きな 大きな しゅうしゅう しゅうしゅう 大きな しゅうしゅう しゅう	
And the second of the second o	いいこう かいかい かいかい アンドラ アン・アン・アン・アン・アン・アン・アン・アン・アン・アン・アン・アン・アン・ア	
The state of the s	第 3	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
· · · · · · · · · · · · · · · · · · ·		
発音を発している。 (文書の)の (大変の) かんない こうなん アンド・アンド・アンド・アンド・アンド・アンド・アンド・アンド・アンド・アンド・		

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

Survised 20 Aug '68

METFOROLONACAL

Frent

. 6 0.2 M

" of which is not the strained

Top of boos mast to surface 900 to 25 to 6.61 to 1988 mate 40°C 2 0 by/m Atron Atmos Dew Inso-slect press poss Eston 2010 25 to 10 to 10 to ر د د د Air Wave recent remonts. Barrace W. press. Ambient Ambient Trant. (depth.) Light solee perency perency 3 6 0 to 2 0 7 / 10 7.9 I bereke OCEANOGRAPHIC Damp Consum (64°H to 49"8) A American Const out to 460 a. mi -5 to 0 to 10° 40°C pat 0.01°C 0.1% Water 1606 to -5 to 3688 to 40°C TENTATIVELY PROPOSED NESS SENSONS CAPABILITIES 0.00 kis 0.01 3/09 1 3po 5 600 n. ms/100-150 n. ms 20 824. M.FED levels (* near bestees) bat. or thest period org. (Baper 43.6/00 Surface to 1000 m dryth 0 to 0.08 to 0 to 15 43 8/4 O in gira, 2 Para Market Mary (Ayr BOA) Vertical Input Dazenten et et. Mas serve (5-yr 80A)

; ; ;

@. oyes. X,Y, @

2. REPURED AMO # 368 BEQUIREMENTS U.S. Coast Charte-Opposographic Services (Ocean Surveys)

Vertical layer 0	2 0														
	8	Me to at Bottom	~				No to us Bodsons			-	-			<u></u>	
		SOOR IN THES CHAPTER						200	1	-	r	Die		ž	ž.
	8 :	9.1 6	28	450¢ to -3	\$ Q	0 ts 90 ts 10 ts		1 40 2 50	2 50 0 50	-15 to	9	80° tv.		â	S
Methodes or ror	•	1	1	8	9	0.5 m		16.20		-		OKE COC.	-	360	an ag
		£ .	Ŕ					34 > 20 0 2 800 10°	2	0.5°C		Ê		10.	47 4 19 1
Dernitran of ob.	10 meta	#						char 01	+	+	-	- 10	:		
	100							07 10	+	-	1		_		-
X.Y	Ames w/	shs 10-4	Libes w/obs 10-40 n. mi apacing	ectar ~				-	-					THE .	- Julie
	James vas	y 300-5	Lines way 500-500 a. ms apart	, trat			.	-	-	-	1	-	-	:	
2	IAP80	~ Q					+		+	-	-		-		:
	SEC INS	T / W				-		W/W	+		7	۲. ×		4.7	4 2
-	F 4							-	<u> </u>	+	+		-•		
1		-						o hre	-	1	ī	6 brs	_	6 hra : 6 hra	6 hr.a
¥, ¥	10 10							10.	+-	+	-		-+	:	
2	1	+						7				io mun		ر س در س	ofE at
1					-			N/N	-		7	W/W	-	1	

lequirements felly met:

Requirements partially not and vivy. All requirements listed in 2 above would be met with the exception of a The flue (16-40 a. ms) apacing in the Ease: Testative "system" has an initial spacing of 100-150 n min (NA and 600 n min DO)

-

Builtymenty: Judged better dose by other means.
Copped, pH, and pictures of fish life: Uncertainty about do, from havy unationded for long period.
Chlorophyl. Nutrients, Plankton, and Ravinscode (RH: I and Wind): Considered beyond 5-yr busy 80.0.

21 13 13

REQUIREMENTS (Continued) REF (ED AMO 4 28B

Parameter Battymentry Coxygen c pH TV or camera. ** Case location Deep vester Link Londontor lish life										
Deep water Sic to	Purameter		Be tiry metry	Oxygen	H _G *	TV or camerase				
Deep water Sec to Sec					-	to monitor figh				
## Bottom Sic to	Geo. lucation	6	Deep water			Unk	ļ			
# 6000 m m 1/1 Unk # 60.0 m m 1/1 Unk # 60.	Vertical lay	1	Bottom	Sec to 8000 EB	Sfc to 6000 m	tak		.		
A	Rengo		5000 m	0 to 10 m1/1	Unk	nak Uak				
X. Y Varies	Marchaelle en	2022	2 H	O.I mil.	N _{TO}	វាធាវ				
X. Y Varies Sed iAPBO Sed iAPBO	Deretton of	-8	10 min			Unde			•	
Z Bottum 8td iAP8O 8td iAP8O Time N/A 6 hrs 6 hrs X, Y N/A 10 min 10 min Z N/A 1 min 1 min		Х. Ү				Unak				
Time N/A 6 hrs 6 hrs X, Y N/A 10 min 10 min Z N/A 1 min 1 min	atempths.	2	Bottum	8td IAPBO levels	Std IAPSC levels	UOK		· · · · · · · · · · · · · · · · · · ·	<u>.</u>	
X, Y N/A 10 min 10 min Z N/A 1 min 1 min		- E	V/N	6 hrs	6 hrs	Unik		i		
Z N/A 1 min 1 min	1	Χ, Υ	V/V	10 min	10 min	Unk		-	• •	
		2	V/V	1 min	1 min	¥n.		-	-	

Parameter		Nutriente	Chlorophyl	-	• Planeton	Rewin	Rawinacarde		
Geo locution	_	Doep water	Deep water		UMK	Dee	Deep water		•
Vertica, layer	1	SEC to 6000 m	84c to 6000 m 84c to '000 m		り乗	OG JAG	SEC to 100 k ft	.	-
Range		Umk	Agr.	-	Unit	¥Q£		•	•
Maximem erior	101	U DE	age 2		Unde	8()A		•	.
Duration of ob.	Ŕ	10 min	10 mins		URK	Brd Brd		• 2	
	×	Varies	Varies		T T	Std		٤.	
Desapting Interestry	z	offer lands	Std LAPSO levels		Unk	Std z signif- icant levels	gnif- vela	· · · · · · · · · · · · · · · · · · ·	
~	i in	6 14.	8 hrs		Unk	12 hrs		•	
1	Χ, Υ	10 mater	10 min		Unk	¥06		•	:
	2	1 mie	1 min		n k	VO8		••••	•

I TENTATIVELY PROPOSED NDRS SENS HG CAF BELITTES

1	Pare meters					1	Survey of the Control												Rev	Rev. seed 20 Aug. Sal	¥
/) 	CEANGE IN) HIC					_			X	TEORO	METEOROL SECTOR		-	-
/	/	Curr	C d	, ,	2	Water	Water W press Ambient Ambient Trans	Ambient	Ambiens	F			+	ľ	-	-	-	1			
2	/	Ų	Person		2	9	, dame b	1			2	Section 198	_	A17	Atmos Atmos	808	les Inc	-	Precise Wind		3
									200	parency	Ŧ	Per	<u> </u>	Le operate	1201#	C Canal	s) mod		72.5		peed
Gaegraphic losethan	lose the	D	X-09/ WWW	Deep Opens 160"N to 60"By A American	Amorica	Com SK on	a Comest cent to 400 n mi	Ē			1		+	-	-	-	- #	-			
Vertical layer	ž.	1	Barban in Case .									:	,	!							
						j					Surface		-			Total			1		Ī
Marke (P-yr SOA)	T SQ			9	4500 to	-5 to	0 00 104	0 to 2 0 180 to 200	22.00				-		_			The Mark the Section of the	8		
		Ř	30 Etc	420/30	2 8 7				07.		100 15 10 0 10 - 25 10 0 10	3	0 to	to 0 ;	6	ot c	25 to 0	800 to -25 to 0.01 to 0-12	0-12		oto
Partie sale		•5	0 0 × 100	0 0 x bds 0 0 1 0 / 1 5 -	1				- 1	1	AX 01		200	و -	∯ 	₹ <u>6</u> £	2 J.0	m/k/0;	1099 mb 40°C 2.0 by/m in./ hr 360°		160 kts
(5-yr BOA)	_		30	8			*		€	\$;	0.2 (1	0.2 ft 0 1 sec 5" 0 1 °C 01 kv 0 1 mb 0 2 °C 19	5, 6,1	ا ا	0	9	2-4.		10.0	-	0.5 kts
Daration of ob.	8	1	Port as	bet or Best seried are Bern server				4			OF 1174 OF 14	- i							ž Ž		34 JO
						2							-		; •		+	:	T	- i	
	X.Y	44 40 40 40 40 40 40 40 40 40 40 40 40 4	# 800 mm/700-150 m. s	150 a. ma						-			+	1				:			
	2	2	A PRO Jess	20 Med. LA PRO Jennels (1 mes. hour						1										•	
	1				(Clarent Control			2 levels			Surface		_			-		-		1	
	2	The Carry In	Ē										-	1		1					
Ob. eynet. X.Y. (2) 10 mts .1	X.Y. (B)	:	1										-	į						i	1
		Ì	Ì										-		1						

Comment Property	continue	Arretic and Antarretto Areas	d Astare	#6 Areas	_								-				
Vertical layer		Sec to					1	-	35	Sfc to			-	<u>+</u> .		*··· · · · · · · · · · · · · · · · · ·	
			+						35			1	-	Ŧ.	Stc		7.5
•		%0. %0. %	0 1 to 6 kts	3.5 2.5 2.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3	4500 to	-2 to	0 to 2000	0 2 04 0		o to	2 2	1	0 to -15 to	‡ £	900 to		- -
Meximum orror		10.	1	3					1	E/201	50 H (1)	25 707 62	3601 40.C		1050 mb		
			3	00/0 mm of 00.0	2	0.01.0	95.0	<u>~</u> _	₹.		1 tt 2 20 109		10. 0 5.C	ບ	QE -		1
Daration of ob.		1 e c	-				-	+	1	+	į į	+	- -			*****	
			-				 -	+	2	10 min 1.0 min	O min		10				
	X.Y	N.	-			-		+	+	+	! - 				e E		to musi to man
		Deta take	+						٠	 *					25.7.	+	
Name of the last	2	LAPSO and hele	File					+	2	Stated		-	H	Ŧ	stated		No.
		. ar bottom						1	IA P		7/7		-	-	+	*	Danny.
·	į	& bra						-	stq	-		+	-	•	V.V.	+	2 / 1 / X
	X X	20 20	+						9	6 hrs	++	+	-	4	6 hrs		
8			H					1	30	30 min '-	-	_		-		+	
	7	30 ada	+								1	+	H	1	30 min		erm or nom of
3. RESULTS OF ABREMENT	1	100		1					30	20 E	N/N	-	-	7		+	

Requirements fully met;

Bequirements partially met and $w_{2\gamma}$

Requirements not most und why All listed requirements for the Arctic and Antarctic. Tentative data-bacy "system" extends only from 60'N to 60's

Page

REQUIREMENTS (Continued) REPINED AND 4 29

GREY AREA	" PARA	KETERS WOW IN	QUESTION FOR	TOREY AREAT PARAMETERS NOW IN QUESTION FOR THE TENTATIVELY PROPOSED DATABLOY SYSTEM	ED DATA BUOY SYSTE	×		y of	Revised 20 Aug 68
Partimeter		Bathy metry	Magnetic parameters	Oxygen					
Capo. Horaldina	Я	A. otto and Antarotto	terette						
Vertical layer	181	Botton	Not stated	Sfc to 5000 m					
į		5 to 10.000 m	Not stated	0-10 ml/l					
Madesa error	1104	2 00	Not stated	0 03 mm!./J					
Darriben of the	8	lo min	Not stated	10 min					
	×	X. Y. Not stated	Not estated	Not stated					
in the second	7	Bottott	Not stated	Btd IAPBO levels					
	į	N/A	Not stailed	6 hrs					
9	×		Not establed	30 rain					
!	7	<u> </u>	Not atales	38 mtn					

PARAMETERS COMEDERED REYOND THE 5- (RISTATE OF THE ART FOR THE TENTATIVELY PROPOSED DATA BUOY SYSTEM

Parameter		• Sediment	* Bottom	* Setemic parameters	* Fawin - (Temp., wind, R.H.)		
Geo location		Aretic and Authretic	Prette				
Verdoni Leyer	1	Not stated			1,000,001		
j		Not stated			90 v		
Maximum error	r104	Not stated			WO8		
Duration of ob.	8	Not settled			77		
	×	X. Y Not stained			Not stated		
Seconding Interestry	Z	Not etabled			Net : Interest		
	i i	Time Not stated			12 br		į
1	X. Y	X. Y. Not stated			*CA	+	!
	2	Not stated			\$() X	+	1
Parente							-

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

ž	Para meters					O	OCEANOGRA PHIC	PHIC								ME	TEORG	METEOROLOGICAL			
		Curr Curr	Curr	a January	200	Water	Water W press Ambient Ambient Trans Wave in asurements. Air	Ambient	A mothers	Trans	Wave T	EBU PERME	it.	è	-		Dew	lnso-	Precip. Wind Win	, jag.	i Ei S
Characteristics		ŧ	appead			20 8	(depth)	light	notae	parrency	=	Per	i.	Ê	t lect	ртевя	point	lation	rate	dir. speed	abeec.
Ougraphic leader			1.0% S	Deep Comm (60"N to 60"6" American Const out to 400 n. mi	America	B CORRECT ON	At to 400 r.	100					-								
Vortices Inper	į	-	Arrham to 16 o m days	1							Surface	:	 -			Top of	buoy ma	Top of buoy mast to surface	300		
Bare (1-77 50A)	8	2 ÷	01 00 00 00 00 00 00 00 00 00 00 00 00 0	0 to	3 8 8	L	.5 to 0 to 10*	0 to 2 0 -60 to		9 to	0 to 1 to		0.00	010 -25 -0 010		01.00	of 25.	800 to -25 to 0 01 to	(1-12 (1-12		0 to
Max orre			8	1 63 fdv + 01 6 1 fbw	1		2.0	13	1				;	ب		10 10 0 1 1 1 0 0 1 1 1 0 0 1 1 1 1 1 1	0 0	ğ	1		0 5 848
18 97 BC4)	_		2	R	}						94 104			,	 ;]			in. hr	,	15. 30
Dente of the	•	1	i	Mat. or Chert period avg. (Represented	The Constitution of	Ē							+	-	4		1	T			
	X.Y	*	S 646 1 ma / 146 - 150 a. ma	150 a. mat					-		1	-	!		-	-					
	z	1	LA PREJ Sen	20 26d LAPRY Jevels (* sear bottom)	bottom)			2 bewalte			Surface	1	-							-	
•	Ļ	any dan e	ì				-						-								
Co. *** X.Y. Co. 10 10 10 11 11 11	X.Y. 6	1:	1								-					-					

Ossgruphic lecetion		1 Deep G	Global Deep Opean/N American Coart	erican Con	T T										
Vertical Layer	5000 m						Sfe			1	33%	Sfc	Sfc		7
***	ot 6 40*	0.05 to	2° R\$	4500 to 5600 tps	3 g	0 to 10	1 to	1 to 1 to 100 ft 40 sec	0 to	- 15 to	800 to	3. 58 D•04	o to 12	3. E	o to
Maximum office		0.3 E	0.01 %	Ā	9.01°C 0 1%	\$1 c	1 0 R	1.0 ft 0.5 sec or 10% or 5%	-01	0.5°C	0.5 mb	0.5 mb 0.5°C	0.01		1 kg
Durke of &	3	or short	had or abort period Avg.				(Bul)	inst or		1	al .	inst or	6 hr	lins.	Inst or
x. v	× 33	.9					3000	300 to 200		+	300 to	Short per avg	80 to 15	60 to 150 300 to	A .
1	est a	118 2 2					A P	150 n. m	-		m. mi/ 150 п. mi	50 a. mi	CNAL		100 m m
**	att bea	end trie - ar beston					N/A		1	-	N/A . N/A	N/A	N.A	Ī	
Ē							8/3			*	6/1	6/3	6,3		
X, X						•	30 min.			*	30 min	30 min 30 min	nrs (c) min		4
2	7						V/N		+	3	A/N	A/N	S/A		

3 RESULTS OF ASSESSMENT

Requirements fully met: All requirements itsted in 2 above

Requirements part dly mer and why

Regularments and and why. Rawthatoucks Data (P. R.H., T and Wind). Considered beyond 5-yr buoy SOA

*680 a maifor lattal "system" special established by telecon on 5/26, 26. (The data from this initial spacing of observations we ald, through use, belo clarify what additional data are actually needed.

NZ FINED AMO 4 30-35 REQUIREMENTS CONTINUED

		 							_		•
Geo location	19.00 17.00	 *	· · · · · · · · · · · · · · · · · · ·	-			7		· ·		
Vertical layer	#yer	-		-			-			· L	
Ì			+					-			
Martin di error	17.0						· 				
Dereston of the	R					-					
	> *								-		
Įį	2					-					
	į										
(Je synch	×				1						
	2										

400
a tot ant a
E S-YR STAT
EYOND I
MINERALD P
FERS COM
PARAMET

Parameter		Upper-Air Soundings	Soundings.			<u></u>	Purameter Upper-Air Sopardings
	-	Air Temp.	Air Temp. Atmos Press. Dev.	Dew Pount	Wind Dar	Wind Spend	
Caro lacadom	s !	DOZONA				Tools Tools	The state of the s
Vertical layer		20 to 100 k					The second secon
Person		3.05 5.05	10%5 to	50 0 F	0 K	9 5	
Martinum error	\$	25.0	3 mb	0.5°C	10*	and the state of t	
Duration of ob	8	last				or 104	
	×	200 to 600 n. m.	furricane area	11 12			
Sampling			300 11	Cast	2 4 5	15 H , .	
	7 Jac. 7	12 hrs	† † 		11 11 7		
	×	1 57					
	2	2 hr		11			
Kemen							

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENT.

I TENTATIVELY PROPORED NIPE SENSING CAPABILITIES

<u>«</u> /	Trans.					3	CEANOGRAPHIC	PHIC					-						Kevi	Revise d 20 Aug '63	Yang Si
/												į	-			F	ME I POROTORACAL	TVJEV			
	/	Ť		Saltanty			Water W press Ambient Ambient Trans- Wave measurements.	Ambient	Ambient	Trans-	Wave m	288 LOIDE		A r At	Atroce Atrock	<u> </u>	-0×01	-osu)	Precio	1	5
				-		}	Š	Ē	3	perency	æ	Per	3	Fe - Fe - Fe - Fe - Fe - Fe - Fe - Fe -	elect pr	SSALID	Pount latton	ation	ě		paads
Onegraphie beseiften		1	- 140.	Deer Obers 160-14 to 80-51/1 Americas Coast out to 464 n mi	1 America	n Commit on	14 to 466 n	ē					+	-	1		-				
Vertical layer		4	Outhor to Seas as dayle	6.0							9		+	i			i				
Berne Char Boat	2			-	-					_						Top of the	PLOY ITAS	Top of buoy mast to surface	ક		
}		3 3	2 2	4 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	25 50 5 50 5 50 5 50	or 9.	3 9	0 to 2 0 -30 to	-30 to	0 to	0 to	1 to 3 to -2, to 0 to) to -2	10 01	-	o to	0 or 52	800 to 25 to 0 01 to	0.12	01 :-	010
Max error		;	20 00	0 10 0		1		T				1	6	300 DK		# GE 8	ا ا	1099 mb 40°C 2.0 ly m	10. hr 36.1	·	160 kts
(5 gr 80A)			7	8	\$	2.00	*	*	8	*	0.2 ft	0.2 ft 0.1 sec 5 *). (c	kv 0	31 kv 0 1 mb 0 2 °C 13	1 2 °C		10.0	÷.,	3 7 5
Derniston of ob.	8	1	Total Land	last, or Beart period avg. (Represented	Tyreses and							4	+		-			!	e e		32.40
	Х. Т	25 ×	S 646 auf 100-150 3. m.	150 3. 201				-	į	2	!		_	:							
	2	2	M PRO Les	20 Staf. LA PRIC levels (* near hottoen)	(worthor)			1						į	1		1				
	F	oral Corne	5					R15.431	•		Surface	į		i	:						
Ch. eyeck. C.Y. (2) 10 am. 1	. A. 68	0	Î	The same of the sa					-						:						
																				i	1

ne haden descriptions of Bootle

2 REPURED A GO # 39A REQUIREMENTS U.S. Dupt. Infection (PWIPCA). Dubermine Water Quality

				-							
Congruptic Incention	Second Second	ž	thore and	Near shore and Estauries							
Vertical layer	į	9			or or	05 J					
					- Monor	Bud	pre	÷	35	7	71
Part of		9	3	90	9 5	0 to 2 5	OF C			E	E
			10	8	<u>ب</u> 8	1y/m		30.0	2 1	2 : c	
	3	.55	0.1 11.0	25	0.5°C	\$5				£ .	Ţ
Darretton of ob	8	5 11.00						+	•	•100	×
	*						i.	<u>Int</u>	- 14 I	in	" min !! min."
		- 1			01-1		1-10		+	+	
Sa mandan				+	B 8				-	0 1	£
	×			1	1 m tn-				um u	E U	n mi in mi
-	2				Brank	digit.	Charles	1/2	4 7	K Z	4
					Ľ.	N bra		ž n		1	
5	×	7		•	121	14		+		() 	
	2				S min				44	1.15	ä
3 NEBEL TE OF ASSESSED IN	AMERICA	SEC NA				uin c	5 min	ż			

Begalitements fally met.

here remembs partially not used up,

Proposition and under the contraction of the contra

Further investigation of mean-shore and constrine requirements is needed. Near-shore measurement capabilities may be different from "system."

REPART AMO 4 39A REQUIREMENTS (Continued)

Secretary Radial decided Corpus Turbidity Pitr Vol Put	CHEY ARE	A · PARAW	ELEMENT FOR THE	THE NUMBER OF	HANAL AND	NORMY AREA PARAZERIANES STRUCK CONTROL TO STRUCK THE THEND TO THE DATE OF THE DATE OF THE STRUCK TH	AT ABILITY S	F-16			ģ.	Hevished 30 Aug. hm
	Ì		Radkul oglea: activity	ريتدا العن	Turbiditi	Fler Vol		E a				:
1	Case Mocentic		Nearshore and	1 Estuarios					:	•		
5 X	Vertical in	į	He to bottom	E				1				
198	1		5.X background	0-30 Lan	901-0	ojq		00-2000 1-2000			-	
hr max frat loat		error	<u>*</u>		Ē	161		35				
1 m interval 1 kr s 1 k	Dirages d	8	1	1	lm. (Jeu.		Ingt				
lingeral Three Linearium		*	1-10 1-10									
1 hz e		7										:
kr.		į	3 5.0			;	-+-					
5 arsten	1	×				+-+-	• •				1	
	}					-						

				T 311 1/1 21	11 3 H . H . H . H	THE STATE OF THE S	V1.W1 0 7W1.W				٠			i
Parameter		33) Chemical	(3) Blokopical	il) Chemistral (3) Blokoghami (1) Merrobiskiogha	ico)									
(see breedles		Negration and Estu	Netrature and Returner			•		:		•	•	-		—-
Vertical layer		Mr. to botton - 1 m			•	·								
1								:		•				
Maximum errur	Marces or run	Ĕ									•			
Decretions of ob-	4						:		:	: :	•	* -		
!	×	100			* • • • • • • • • • • • • • • • • • • •	÷				•	*			
1		1 Bi fricerrate							·	• •	,		:	
		1 N.C			•	· T-						-	_	
	≻ ;«	10 15 15		***	*	· · ·	→		.		* * .			
			(manages of anything and anything and anything of the state of	· · · · · · · · · · · · · · · · · · ·	A		T			1	1	1		i

I dimensional disapposed exista soutable surchemica surgers because the best of perticular rolls produce to a marginal satisfication and automorphisms. Therefore the productivity aligner constant surface or grant and successful soutable souther countries are produced to a streptor or constant.

i L

ASEMBENT SHEET FOR HELINET DATA HEQUIHEMENTS

Parts machers				*	1000年度 1000年度	•	10 10 to 10						5	•	
Chromosyladios	Curr Cuer	1				Arrange A source Trage	re i Trans		1	Atm		MARTE SPECIENZE A	Į	A S. Market Co. Aug. S. M.	ž
***************************************	Dies Commercial de Constitution de Commercial de Commercia	× 00 m	A smerices		ES +000 a.	Operator - andres		HI Per IN	-	100		Promit Latina	te	-	3
A. 7. B.M.			30	: शुक्रामा क्षेत्र स्थान		2 2 2 2 2 2 2		ž			Mr. officer	Transferring mast to marthere	ritace		
A 17 M/A		8 9 9 9	+	+ 0 - (c o	1 =	# # C # # # # # # # # # # # # # # # # #	£ X	8 5	0 to 25 to 0 to 8	3	1 C	100 0 110 25 100 0 100 0 0 0 10 10 10 10 10 10 10 10		3 3	1 0 to 100 king
	Shark or Mount parted any (Respre-	in the second						# 1 To 1 To 1 To 1 To 1 To 1 To 1 To 1 T		9 1-1 0 1 kv 0 1 mg/ 0 2 m	É	¥:	2		# 1 60
		1 777	:							-	-				: :
	بہر		Ì			2 F + 6 La		Bertace							
A LX	Î : i								•						
The handle of the section of Section	Ì														

	The second of th				
おおおけられ はいまして 日本の 神経をあれるのははないのと の 「おれているのかの	こうかん 一年 一年 一年 一年 一年 一年 一年 一年 一年 一年 一年 一年 一年				
Christian Lands (Arms) Library	1917年 A Manager And Andrews Company	10日本が、東京の			
Vertical types	1.91.3				
118 11		20.00	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	,	1
	oracinate and the second of th	3 2	* 21.0		
- 51	•		P. C. T. T. T. T. T. T. T. T. T. T. T. T. T.		
THE OTHER PERSONS				4	
1 2 2			last		. 101
21 07 07 07	20 k m	Zon mi			
		S 0) 2		•	•
1	A		fhrm	3 hrs.	
### (1) TY (3) A ME	10 main			The state of the s	
3	The second secon		·	*	

Angertransite partially use and was

August manning and used country manning. Transmit is the contraction of the contraction o

"Went shows size to made its liber X. Y and 2 specifies remains in in size than linked rations

region apper d'Arthursale salellatione : especie de la latin de latin de latin de la latin de la latin de la latin de la latin de la latin de la latin de la latin de la latin de la latin de la latin de latin

| 大学 | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 mm | 10 m

											: :			•
		The same a comment of the control of		2										-
7. Campara		Harte a spiral	Ja. 9 . 1	. Condition		÷.	:							
-		******	-		·		•				-			
Varities: 1784		Total Control of the					•							-
}		C S S S S S S S S S S S S S S S S S S S	ន ្ត្រ ្ត		41,23,24	3 € . 3 3 € .	•		•			4 **	. •	
Marte was even	~		. T B		÷.									
(loration of th						e e e				.,		•		
	<u>-</u>	· · · · · · · · · · · · · · · · · · ·			• • • •	; •		•	• ***	.		· w ==•		
Ji					****						• 		2 -	
	3						1				•			
		2.88 e-				• • •	•••						-	-1

The state of the s	an an an an an an an an an an an an an a				
The to be before the second to				n was a saa saa	
The control of the co		4		. =	
		<u>.</u>	• •		
Actual Ac	• • •	•	•	•	•
*					
***	1	•	•	•	
		· ··	•		
•	• •	•	•		
NE C		· · · · · · · · · · · · · · · · · · ·	• • •	••••	

i chemicina in magnemente acolde. Notal protoke consiste a cropmi terranció inversión y como consiste con consiste con consiste con consiste de terranció de terr

.

ASSESSED NOT VALLED FOR REFINED DATA DESCRIBENTE.

- Andrewson - Control - Co	The section			:	1	:	7179 S 4 M . W . S 4 M . M	7678		1							:	¥ .	Revised 20 Aug Tex	12. 14
On resembly states.	3	3;		* P. P. P. P. P. P. P. P. P. P. P. P. P.	11		4		A station and a substants. Digital acts and	**************************************		THE THE SHEET STREET	7 E	A CHILL	E de la companya de l	MARTE CHIEF CHIEF CA	2 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 4 1 E	1	7 g
(See 17)			į	A	Dark (News 160-1) to 60-5yts America		A Course and the Abson pas	Parent	والمراجعة عادات والمحافظة		<u> </u>		-	_						.
Vertical Days	ž ž	1:	4 - 10 H C - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	3 3	3	3	1	21 22 140	ا ا ا الله الله الله	- -	P. rie	•			* * * * * * * * * * * * * * * * * * *	den gowith	when the cap maked to expension	:		
A yr Alb.		i	1 1 .	8 6 6 6		2 614	1 ×	· .	. ž. •		E &		J. 10	3 1 5	3 (1996) 12 (1996) 1		6 2 E	ž ; a	•	Secretary sets
Chryslen A	•	•	Ì	The property of		., £				-	.					٠.		12 4		
	*		-	The live in																
	w	1	LA PORC LEGO	20 td LAPMA lorente (* men.r bratana.	- Andreas			-			Antara									
1			į										••-							
į	Thinks Meanware A Built	1	and the					-					7							
AR PURED A MED # 67	10 to 0.1	No.	V. CHECKERTT	MAN AND	MACANDESTATE NAME	:	measure Dageth of Water to 4000 fathouse	7 × 10 5 6 7	to fine tat	. Program										
()mgraphs brest.		30	-	. 40% Full-man Day's from #2 Asta	Day's from 18 Asta	× ×	America Africa Eurige and Aparentla	Lariga	A INC. A BARE	1111			_	:					1	[
Varties ispet	ì			-		•	s e	· 	<u>. </u>					h	1	-	•	ļ.		
1					+		E to					- 4			• .	•			• •	
Mariana arres	!				•		B 00			**	 	•			•		•		•	:
Chrone a	1		:		•	:	·		٠	•	•	•	•	•	•					
:)	•					ĭ								•	•	•	•		
	·					_	27. • Carl				•	•	•	•		•	•	• •	•	
							* *	_	•		•	•	•	•	•	٠	•	* * •	•	
:	1	:					# # () # (_		•	*	•	•	•	•			٠	٠	
1	× :	•	•		•	•	*			•	•	•		٠		•	•	•	•	

THE RESERVE AND ADDRESS OF THE PARTY OF THE

Respirements fully men

REQUIREMENTS (Continued) REPINZO AMO 4 67

Geo. lecution Same Vertical layer Sfc Mange 1 to Mange 20 ft Matheman error 1 ft	Sates as page 1 98°c as 20°C a		•			-	-				
al layer											
al layer	- 5					-		_	-	-	
OEE STY					-						
			<u> </u>			-					
Dereston of ob (Con)	Cont. trace up to 3 mos										1
X, Y I n. of						-					
Remedity Z N/A		-									
Time 2 br											
Ob. swat X. Y 10 min	i (ra			+		-					
Z N/A					-		<u></u>				

	Z
	5
	ŧ.
	Š
	Š
	2
- [B
	Ş
1	٠ ۲
į	7
	2
1	L
8	Ž
	Ę
ž	
4	į
-	
Ĉ	;
ATE	
7	
H	
NO THEE	
¥	
LED BE	
ERE	į
Ì	
8	١
1	I
Ţ	١
3	l

		THE AND THE TENTATIVELY PROPOSED DATA STORY SYNCEM	ALE OF THE ANT FOR THE	TEMTATIVELY PROPOL	MED DATA MOOF BY	A CEN			
Parameter									
Geo. location							 		
Vertical layer	1701								
į									
Maximum error	1 201								
Derett. of alt.	8								
	××								
informatty	2							-	
	7.150				-				* 10000 10000
Ob. evack.	×								
	2							-	
Party carbo									

TEMINITARII PROPUNED ADMO SERMED CAPABILITES	Track Internation		MA 35 NA	ECCAPABLE OF	17.17.5														2	Reviewed 20 Aug. 68	65. and
*	Para motern					ō	OCEANOGRAPHIC	PHIC			-		-			a a	TECHO	METERROLOGICAL			
/		Curr. Curr	Carr	Saltnity	Sound Branck	Estra	Water A press. Ambient Ambient Trans-	Ambient	Amotern	Trun.	Wave measurements.	GRUTTER	-	131	Air Atmon Atmon	-	flew Ituso-	True C-	Precip. Wind	TANK!	Wind
Characteristics	smoteriatios dir. rpeod	GF .	ryead			Î	(depth) Dight	Ě	and the	/Prency	ž	ž	2	4	ekiyet. press	press	71.53	Lettes	2,4	ŧ	De la company
Geographic location	loneitice	Deep	OME (60°)	Deep Oomaa (60°N 50 60°6 yrl. Amer		* Cuent on	rices. Count out to 400 n. mi			Section 1995	No. Take			and and	Same range	orphereconstructure	F	A CONTRACTOR OF THE PARTY OF TH	en en en en en en en en en en en en en e	4	
Vertical layer	ı.	Serfaxo	Series to 3000 m depth	- depts				The same of the sa			Martace		+			Topoca	DOCT THE	Top of booy mest to surface			
Range (Sryr SOA)	- 90A)	0 to	0.005 to 10 leta	0 to 47 0/00		-5 to	4500 to -5 to 0 to 10 ⁴ 5600 tps 40°C pe1	0 to 2.0 -60 to by/m -20 db	-80 to	0 to	0 to 1 to 0 to 1.25 to 6 to 100 ft 60 mec 360° 60°C 30 to	1 to	01.0) of 52	3 2	100 co 25 to 0.01 to	23 50	0.01 to	6 12	0.0	910
Max error (5-yr 80A)			0.03 life	0.01 0/90 1 tpe	<u>ğ</u>	\$1 0 0.00 0	51.0	1.1	4 8	É	OF 101 at 19	0.1 adsc 07 14	:	2	1	0" 10" 0.1 aon 5" 9.1°C 0.1 ky 0.1 mb	Ç	01 750 02-0 17	0.01	:.	0 S ME
Duration of ob.	8	Inet. or	Short per	last, or Short period avg. (Represent	epresentative	•					.—————————————————————————————————————	Ţ	+	1	Υ	T T	- ₹	7		-	
	X.Y	A. 68	100	≤ 600 m. m/100-150 m. md			-						-		!		1			-	1
Se mpilage last a efty	2	20 3md	IA PBO les	20 3sd. IAFBO levols (+ rear bottom)	bottom)			2 levelo			Berface			İ							1
•	2	6 hrae bre	era era										_			-					
Ob. eyuch. X.Y. (2) 10 anda, (1 anda)	X.Y. (2)	10 mts.	e i				-						-								

IV-37

DEFINES A.	8	1	STATE NO.	SIMAN	Acado Craph	ne Ornee	Undervate	" nerings and a complement of the frequency of the Underwiter Environmental Monitoring for Trat Ranges	enterring for T	Ranges					
Obographic location	location	Barkin	ig Sands.	Keuwi: 3k	Cretx: an	d Autec 1	est Ranges	Ranking Sands, Kauwi; St. Croin: and Autec Test Runges: Sen Clemento only Occasional Shaport	Occasional Bu	ne.					
Vertical layer	ž.	Me to	Me to Me to		Sec to										1
		Potton	bottom bottom		Doctorn										
Ne. age		0 to	3 S	Markov P	4800 to	رة د د	0 to								
		Į		-	3	2	d parties		-						
Maximum error	rror	19•	or 5%		\$	9	3 per or 53					ļ 	-	ļ	
Derutton of ob.	8	Į.	last or		1				-				-	+	T
		2 1	2 media avg)		•								
	X.Y	2 bears	10 n. md	2 buoys 10 n. nd apart, within	~ up								+	-	I
7		20 3. 02	of saland	20 B. 72. of inland in each range	~		3						_		
	1	Varies	Varies denosr >						-		,		-	+	
		per the	thel										_	_	
70	Ē	5 más 5 mato	5 mato		5 miles		-							+-	
O. emot	X, T	1 min	1 state		1 sata		\$	+					+	-	
	2	3 min 3 min	3 min		5 mlts	3 main 3 min	3 min						+		-
* 100											_	_		-	

3 RESULTS OF ABBRICHERENT

Requirements fully met:

Sequirements partially met art why: All requirements in 2 above would be met with the except in of a 5 min frequency and 1 min X. Y flynch, of ob.: Tentative "system" has much less stringent values.

*All test ranges have maximum depths within the tenizitive "system" value of 5000 m

Tick! Fluctuation (DC): Uncertainty about instrumentation received secursey. Sectiment Deposit: Judged better mensurer's by other means.
The San Clements Test Range may require intense support occasionally, in none for periods of time. Regular mounts not ment and why

PAGE 1

REQUIREMENTS (Continued)

Ranges Ranges 1 t t t t t t t t t t t t t t t t t t t	Parameter		Dde.								
Sic Bostom			nuctuation	deposit	-						
105 0 20 ft 105 10 20 ft 100.	Seo. locati	8	Test Ranges		The state of the s		T	T		I	
0.5 to 20 ft (cd. Inst X. Y Same as page N/A Thas 30 pen X. Y N/A	Vertical la	26	%	Bottom							
frot 6.7 ft frob. Inset X. Y Same as page D. N/A Time 30 m/s X. Y N/A Z. N/A	Renge	!	0.5 to 20 ft								
7. Y Same as page 2. N/A These 20 pc5. X. Y N/A 2. N/A	Maximilan	PT70E	6.5 ft	0.5 ft							
X. Y Sume as page 2 N/A There 30 m/3 X, Y N/A 2 N/A	Duration or	8	t d	Inst							
2 N/A Titas 30 rg5n X, Y N/A Z N/A		×		1 2							
Thee 30 refn X, Y N/A Z N/A	Sampling Interatty	ęż	N/A	¥/%				***************************************			
X, Y N/A		Than	30 187.71	UDA							
Z N/A	Ob. avach	×,	N/A	N/A		 	-	-	+		
		2	N/A	N/A		 	+	+			

5
a de Care
ENTATIVE SECEDERAL DATA S
Ž
TNTA
NGI.ERED BEIOND (HE S-YR STATE OF THE ART POS THE TENTATIVELY PROPOSED DATA
COND THE S-YR STATE OF THE ART POS THE
ž AR
HT 40
ATE
YR
7.
QNO
D BE
HIST ERED B
PARAMETERS CONSI-ER
TERES
RAM
à

Coo location Vertical layer Range	Parameter	_							_					-	
	1							-							
														-	
	vertical is	Lyer						<u> </u> 	-					-	
	Range												-		
│ ╬╶┝ ╌┈ ╌┼	Maximum e	error			ļ 			-	+						-
 	Darration of	8			-			+	-					-	
											•				
		Х, Ұ							-					-	-
<u> </u>	Sampling intensity	, ,						-						-	
		Time					-	-	-				+		-
_	4000	×						+	+						
		2		-	-		+	+		-					

<u>*</u>	Para modere					G	CSEANOGRAPHIC	PHIC					_			Z	ETEORC	METEOROLOGICAL			
		250	5	1 1 1	3000	Water	Water W press Ambient Ambient Trans-	Ambient	Ambient	Trans-	Wave III	Wave matteurements.	_	A:T		Atmong	2	Ineo-	Precto.	1	N N
Characteristics	3	Ü			1	a mar	(dapth)	lughe	96 POR	parency	##	يغ	ž.	18 E-20 -	e jact	27638	pot M	Jation	et ar	#	y N
Occupation benefice	1	6	Mea (86° 5	Dump Opera (60"4 to 60"8yM. America	America	Const on	us Conset out to 400 n. mil.														
Vertical layer	i i	P. C.	Secritors to 6000 as dayo	9							Berface		_			Top 3	Distant 15	Top of book mant to surface	a.ye		
Bare (Syr BOA)	POK.		3.	3	45 00 to	{	0 10 104	0 to 2.0 -80 to	-80 to	8	0 50	3	0 to -25 to		9	800 to	.25 to	800 to 25 to 107 m	٥-12	0 6	o to
		i X	2	43.67	5600 fps	2.04	150	a / A	-20 db	70%/m	100 H	40 mc	360. 60.C		10 kv	1099 map	J.0+	1099 mb 40°C 2.0 by	in./ hr	.00	30 27.8
Mes errer			9. 83 KLL	01 0/ gg 1 fps	1	0.01 -C 0.1%	310	3.0	4	2.5	0.10	0.1 mmc 5°	_	9.14C	A3 10	0.1 mb 0.2°C 19	0.2°C	<u>*</u>	0.01	2.	0.5 kts
(5.7 × 50A)	_		£ 8	}							or 104	<u> </u>	_						io., br		or 36
Derrate of the	8	3	Trade	has, or thert period svg. (Bayressandfve)	T. Y. WOOD BALLED ST.	Î															
	¥,¥	989 5	2 846 B. mc/100-150 B.	150 n. m									-								
	2	2 SE	IA PEO ISM	20 Std. 1A PEO lovels (* mer bottom	Doctor.			2 invelo			See, face										
	1	,	j																		
Ob. synch. X.Y. (2) 13 auts, (1 sales)	X.Y. B	č g	(1 sage)																		

*leschudes Measurements of Senils

IV ~ 39

REFINED AMO 4 69 REQUIREMENTS Mayal Companying

										-	İ						
-	Open Co	*** (Fee	Map)														
,						S	3		100		L	_				2	7,0
						bottom			5		_		<u> </u>				9
0			3	oz 00.94	-2 %	38c to	l°	to	- 3	3	9 3	_	- 25	91.9	Ì	53	3 5
*				5600 fps	9	1100 IB	•	c kc	80 th		8	-09	9	ņ		360.	120 kts
		0.2 kts	0.5 9/00	1 tys	0.1·C	2 m or 1%	•"	8	8	4	<u>:</u>	1.0		၁		15•	5 kt/s
	e man		1				-		5 11	2 ta 3	_					AVE	Avg period
									3	3,5	BAR	1817		 -		3	ų.
f, ¥	1 4		1 at the 22				-	1	1 site	-			T T	ter a.t	-	1 816	Bite at
	Ę	_	a time						# CT	1			7	960		ě	96
2	E 000		7			× ×	<u> </u>	ar with	A/X				2	4		1	4/2
							4	cation			_		<u>`</u>				
						K/X	•	brs	9	•		*	8	100		6 hrs	6 hrs
-	-		1110		Γ' 	_					_						
	o marks		¥/x				Z.	٧/١	N/A			•	Z	*		N/A	Y X
Z 3	nedn		N/A					V/	V/N				N.	A		Y/X	N/A
Northeal layer Vortical layer Vortical layer Vortical layer Mangalan orresponding to the standard of the stand		Desg O Variet Variet 0 to 360. 10. 20 mila arg arg arg arg arg arg arg a	Desg O Variec 0 to 360. 10. 10. 10. 10. 10. 10. 10. 10. 10. 1	Varies Costa (see Map) Varies Costa (see Map) O to (see See See See See See See See See See	Varies	Dampy Oceans (see Mapp) Varies Cores (see Mapp) Varies Cores (see Mapp) Cores	Varies	Deep Cores (see Map) Warfee Make to bottom Make to bottom 0 to 0 to 0 to 0 to 0 to 0 to 0 to 0 to	Varies	Description Octoor Varies Varies 0 to 10 to 2 to 2 to 3 to 3 to 3 to 3 to 3 to 3	Description Occurs (see Map) BRC to be bettern Varies BRC to be bettern Varies BRC to be bettern es Wife to bottom Varies 86c to bottom Varies 86c to 3 to 3 to 3 to 3 to 3 to 3 to 3 to</th> <th>Varies March Warries 66 kg Fig. 60 kg 70 kg <</th> <th>Varies Make by Locate (see Map) Sike to bottom Varies Site Site</th> <th>Usery Occas (see Map) Warter Varies 960 0 to 0 to</th> <th>Varies Make by Locate (see Map) Sike to bottom Varies Site Site</th> <th>Varies Mac to location Varies 86t location 96t location</th>	Varies Wife to bottom Varies 86c to bottom Varies 86c to 3 to 3 to 3 to 3 to 3 to 3 to 3 to	Varies March Warries 66 kg Fig. 60 kg 70 kg <	Varies Make by Locate (see Map) Sike to bottom Varies Site Occas (see Map) Warter Varies 960 0 to Make by Locate (see Map) Sike to bottom Varies Site Mac to location Varies 86t location 96t location			

3 RESULTS OF ASSESSED

AL 13 Requirements fully met.

ments listed in 2 above with the exception of 30 min duration and 3 hr frequency of ob. for current velocity—these could be met with an operational change of sections and "system."

Mequirements partially met and

Requirements not met and why

Cravity, and Magnetic Fleid Intensity.— Uncertainty about measurement from general purpose busy of type for proposed "system." Propagation Loss, Bottom Pt stos, and Total Cloud Amount:—Judged better done by other means.

Bottom Sampling, Biological sampling, Nutrient Determination and Visibility:—Considered beyond 5-yr busy, SOA.

Page 1

RETINED AMO 4 69 REQUIREMENTS (Continued)

Furtineter		Propagation loss	Gravity	Á1	Magnetic field inwasity	ш.	Bottom photos	Total cloud	
Geo forestion	6	Deep Opeans						†	
Lemical layer	,	Veries	Varion	*	Varies	-	Bottom	Sfc	
Respon		10 cyc to 10 icc	950 k to militari	21 B	20 k to 36 k Camma		K/A	0 to 10, 10	
Mandaiva error	rror	£	2 md111gm1	ugal.	1 Gemma		N/A	1/10	
Deration of ob-	-8	Varies	1arul		Inst		N/A	Ibet	
	x. ¥	n de la comp	2		Unit		Varies	Single site	
Partie Marie	2	Vezios	See ste	fc	Sea sfc		N/A	N/A	
	į	Verlable	Y/X		1/5 yr		V/Z	Unik	
2	×	N/A	N/N		V/X		N/A	4/2	
	N	∀ /x	7.72			-			

Parameter Bostom Biological Visibility Witthent					ALE OF THE AN	TO FUR INC IEN	THE STATE OF THE S	
	Parameter		Bottom	Biological	Vietbility	Nutrient		
			guilden es	sambling	,	determination		
Southern N, A Str.	CAPO HACADE	£	Deep Oceans			•		-
0.5 to 100 R N/A 9 to >10 mil	Vertical lay		Bottom	< 'X	- FE	Not stated		
Co	Range		0.5 to 100 ft core in 60/0 :s	L	×10 ml	Unit		
X. Varies 1-3 hrs 1-3 hrs X. Varies 1 site at a time X. Varies	Maximum e	r 7:04	N/A	N/A	10%	A Company		
X. Varies 7 site sisting	Deration of	8	A/N	1-3 brs	i-3 hrs	bet		
Z N/A 2 selected layer		×	Varios	I silve at a time				
Time N. A. Omore Stra. Once Stra. 2. N. A. Stra. 2. N. A. A. A. A. A. A. A. A. A. A. A. A. A.	Sampling Interests	z		2 selected lay	1913	Varies		
X. Y N/A		Time		*	35	1/sta/seasce		
7 N/A	(3b syrach	> ×	N/A		4.44			
		2	A/A					The second secon

ž	Para meters						CK F 4 MOKING 4 PHIST	APHIC					_			¥	ETEORC	METEOROLOGICAL			
/	•	Curr Curr	Curr	1	Sound	Water	Water W press Amorent Ambient Trans-	Amoient	A rabbent	Trans	E exe	Wave measurements	•	-		Atmos	3.00	-580	Precip.	WIN	Wind
Characte methos	/غ	ŧ.	2		Page 1	3	idepth,	Ę	3	parency	Ħ	Per	ភ	È	elect		Pod H	letion	Tate 9	f.	sheed
Geographic location		○ 4	H-09/ TES	Deep Ocean (60°H to 60°5) H America	America		Count out to 400 n mu	E													
Vertical layer	•	Martines	American to Sett in depth	10.0				1			Burface	!	-		!	Tapo	T buoy in	Top of buoy mest to surface	a) de		
Pare 15-yr BOA	ĵ.	9 °	9 06 to	0 to 420/88	3 00 52 3 00 52 3 00 52	-5 to	0 to 104	9 to 2 0 -80 to	9 90 90 90 90 90 90 90 90 90 90 90 90 90 9	0 to	0 to	1 to	0 to	25 to	2 ° °	800 to	-25 to	800 to -25 to 0 01 to	0-12 in./ br	0 to 360.	0 to 160 kte
Mas error		÷	0 55 kgs	0.03 kts 0.01 0/00 1 fpe	3	0 01 C 0 13	£1 0	=	6	<u>*</u>	0.2 ft	0.2 fs 0.1 sec 5*		Ç-1 o	0 k v	e -	0.5 €	±	9.01 in./ hr		0.5 kts
Darration of the	8	4	1 P	lines, or Mort ported ang. (Representative	y seems	(e.c.	-							1	1	7	1			1	
	× ×	3	# 600 my 100 150 m	150													-				
Toponalty	2	2	A PBO less	20 Sed. LA PSC Levels (* mear bottom)	bottom)			2 bevolts			Surface										
	ţ	ua yhaa,	£																		
C. syneth X.Y 23 10 metn,	× Y	ő.	Î								į										

Caragraphic lacation	- monthe	World Wide			wird force	
Vertical layer	ž.				SK	Skc
•					0 to 360*	0 to 120 kts
Maximum error	•117G				10.	7 61
Dereta d d	8				10 min 10 m.n.	10 18
	ж т					66
Se rapitati	7				1	8 < a 2
	1				1	6 hrs
1	×				-+	14 -
	7		The second secon		÷	N/N

Requirements halty meet: Burface requirements for Air Temp, Dev Pt., and Wand-but they are also met by USN AMO #12.

Requirements partially med and why

Proper responses not men and why

Total Cloud Amount — Audged better done by other means.
All other Upper Air Obs Listed on page 2 (alove buoy mast to 100K ft). Considered beyond 5-yr buoy SOA.

Page 1

NEPINED AMO → 75 REQUESTEMENTS (Continued)

7 X X X X X X X X X X X X X X X X X X X			
### O tan 100% O			
A X Y X The The The X Y X X Y X Y X Y X Y X Y X Y X Y X Y			
A X Y Z Z Z Than		1003	
2 Z T T T T T T T T T T T T T T T T T T			
Z Thus	<u> </u>		
Z Thus	-	IC ::	
Z X	7 2		
, x			
	(b synch X. Y 1 hr		

,		1					Maran Lain Buch System	BUCK SYSTEM			
- Contractor		200	A. A. A/G	Refractive	Vert at	Ice crystal	Orogo	Cosmic	Atmospheric		
Geo location		World-wide				Pert. etze	content	radiation	• lectricity	Rawinsonds (Wind, air temp. D. P.,	
Vertical layer	1	#C to 100 km	4/A 6-56 k								
			A/G59-190 x	20 100 H 22		1	40.000 ft to 100 000 #	9 000 #	1000		
ļ		0 to 100 k ts	0 to 29	200				2,000 11	one to 100 k ft blee to 100 k ft	Sale to 100 k ft	
			1	200	ž.						
Mentanue error		***									
		200	# e	n unit	1						
The state of	1										
	j ,	L L	-	Short per avg USE	Cal.						
	>		+		-					I I I I	
Semption.		1								•	
Internatity	N	<sub X	٧/٨	I k ft to 40 k ft	40 k ft	0	1		1		
				E H > 40 k H	U 10				1 K ft to 40 k ft 5 k > 40 k ft	5 k > 40km	
	i	-									ļ
	- -	1	1						+		
CE SYNCH		+		Under							
		Y/Y	Y / y .	Car					l hr	l hr	
,				_	,				-		_

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVELY PROPOSED NDS6 SENSING CAPABILITIES	MONG ATA	OSTD NE	NEW SECOND	WG CAPABI	s (ILII)														Rev	Revised 20 4ug '68	89. 3 ny
4	Para mertera					1	OKTEASOK, PAPHIC	трян				-				×	THORE	METEOROGICAL			
/		Curr Curr	Curr	1	Sound	Water.	Water & preas looken trables Trans-	Trappert	1-mpien:	Trans.	Wave m	Wave measurements.	. 638.	<u>-</u>	Atmos stmin	VED:N	Des inso-	-osu:	1 <u>1</u>	₽a; 3	.¥.
Characteristics	200	4	Deed		passed) 1	· Cerpth.	lagent	nos de	parency	¥	Per	i i	dw ey	elect	press	point lation	lation	rate	d) I	paade
Geographic location	•	Desc	(8-8) of N-01 and de-	Deep Opens (80° N to 60° 5) A Ameri	America	n Count	homan Comment ount to 466 m ma	ĩ				2									
Vertical layer	ž.	Part and	Derface to \$400 m days	1							Surface					Topo	FI GODE	Top of bury mast to surface	#C#		
Range (Sryr SOA)	*O*	9	0.00 00 00 00 00 00 00 00 00 00 00 00 00		4506 to -5 to	-5 to		0 to 2 0 -80 to		S 6	0 5 5	og ,	0 to	0 to -25 to 6 to		800 to	. 25 to	800 to .25 to 0.61 to 0-12	0-12 0 00	900	0 to
				- 7		}			,))					_		;		3	,	
Mar error		:	9.00 bts	0.63 lets 0 61 9/ go 1 5pa		J-16 6	e: 13	7.	€ ~	\$,	0.23	02 N 0 1 sec 5.		0 - د ر	91 E	6 E I c	0240 13	1,5	0.01	.2	0.5 kts
¥36 14 5)	_		<u>*</u>								or 10								i.		or 35
Deration of ab	8	8	Tree ben	inest or Sheet period ave. (Represent		Edve				}		! !		!			!				
	×. ×	۸. وق	* 100 . The 100 - 116 3 mm	13.5 3 300					-	i :			_		: 			 			
Se moting	2	2	IA PBO Jems	20 Std LA PBO levels /- mest cotton:	SCION	, I	!	2 Jevels			Buriace					!					
	E	era Çum e					,	<u> </u>				! !	-		-						
(30 seach. 2 Y. (2) 10 min, (1 min)	× 7.00	10 mile.	C and an																		

"Includes Manualtement of Swellin

2. RETINED ABJ 972. REQUIREMENTS Naval Weather Service Support Water Surfaire and Subsurface Operations	3260	HEQUI.	EMEN	S Nava We	rather Ser	VK.P. Suj	HEM HOCK	Surface	ind Subsur	race Oper	attores										
Geographic Lossing	SE CONCE	World Wide	¥ HQK										 								
Vertical layer		Sic to bottom	octoor (-	-							
		THE \$ 5000 ER	8							•	ă										-
P. S.		3 50	8 3	03 52 cs 28	4500 to	-2 to	9 to	0 10 2 0 - 46 10	62 94-	010	010 (10	ì	o to	0 to -25 to 0 to		930 to	-25 to	-25 to . 015 to	£ - 6)	010	0 to
		360	C 1443	5 Kt2 40 0400	5600 fps	35.C	2:00 pas ly.m		3 0 0₹-	70% m	1300 ft	. H	360°	oo.c	10 kv	1050 mb	49.C	190 ft 46 per 360° 60°C 10 kv 1050 mb 49°C 2.0 3y/m 12. in	IR, it.	360	160 kts
Maximum error	Ĕ	10.	OR KIS	03 ats 0.1 90c	<u>.</u>	130	18	\$1	3 (\$	2.4	<u>2</u> 2	0.1 sec or 19	,01	0.1.0	01 kv 1 m.b		1.0	ž	0.1 ta/br	•	10,5
Canada S.	8		-	-											+-					10 min for	o.
diper re-		Ä								_					1	-				Int. wibd	
	×	6.00		-				-							-						
		Ē											-		-	-				ļ	
		N-30									2				1						
		# () () ()									c È					 					
	2													,							
		•												-		-					
	×	10 四江																			
	~	Z												++						++	
,					-		_	_					-	-			_				

RESULTS OF ASSESSMENT

Requirements fully met: All requirements listed in 2 above.

Requirements partially med and why

See State: Some measure of sea state can be approximated from wave measurements—whether the coding will be exactly what is wanted mast be resolved.

Visibility: Some measure of borizontal auface visibility can be approximated from light back-scatter measurement within close proximity of booy—whether these will satisfy long-range visibility requirements is a sectional question.

Naque restaute not not and why

Total Cloud Amount Judged better fone by other means.

Total Fluctuation (EA): Uncertainty about instrumentation meeting required accuracy Cloud Base and Refractive Index. Considered beyond 5-yr busy SOA.

IV -43

CREY ARE	KNIKA . Y	TETERS NOW IN	QUESTEA FOR	THE TENTATE	VELY PROPER	TORKY AREA FRAMELEMB WOM INDICETED FOR THE TENTATIVELY PROPORED DATA BE ON SYSTEM		2	Revised 20 Aug. 88
Pirese		Total long	Tital	Yes etate	Herizontal				
		THE COLUMN	I to taski ton		vinite illi				
(Amo localina	ę	World wide	and the second s		•				
Vertical layer	•	Above ado	318	, J	ă				
3		9 1 02 5	1	Cock wto 9	18 01 01 0				
	• 1 104	2.4	5) cabigory			The state of the s		
	Ą	in the	lagi	fast	la et				
	>	604: a m:1	\$00 a mi	660 th ma	\$00 m				
Y A	2	* X	¥ .	4	* /				
	T1084	6 hcs	12 hrs	*. A.	6 5 5				
4	×) Rr	1 107	4	lar				
	7	۲ ×	æ Z	₹ ₹	¥. ¥.				

Nemarks "Original are state measurement as a makeal operation which can be approximated by a combination of experiment measurements

Personeter		Cloud tage	Red ruction									\lceil
i			i prop a	-		-						
Care har atte	1	World wide										1
Vertical tayer	į	Me to tock n	*	:	}					· · · · · · · · · · · · · · · · · · ·	-	
Z.		2 7 80 1 33 c	į	:				-	-			
Manifest error	4	101	+								!	1
Derector of the	8	E S	***									1
	: :	18 000	Age of Death	-			:	-				i
Banneling internativ	`		< z								-	T
	ğ		A STATE OF THE STA		†·	-	 					1
	, ,	ž.	Lizz et		•					-	-	Ţ
, !	κ,	- -	· · ·	•						:		T

Name and

2

PENTA TIVELY PROPERTY NUMBER SERVED IN CAPABOLS THE	Printer Division and	Dept. St. Net.	MC. CAPABO	831.71																
Part and of the same of the sa	-		1															S.	Revised 20 Aug '68	15, THV
		1				A SANGAMANTIC) H.A.	•							7	TEORG	METEOROLOGICAL			
1	÷		Ma Hosting		3			A rzy sent	242	Wave m	Wave measurements.		¥	Atmos Atmos	-	*		1		1
							Ę	1 70	E march	F	ì	2 2 5	È	12			Lation	1		7
Chang Change and Change Change also is to 60-80 ft American Const. on a const.	5	H-OW WOLL	A 5.03 m	A mendea		TO A TAKE OF THE PARTY OF THE P	No. of Contrast and St.	- John Commence	AND LOCATION AND INCIDENT	-		+	-		1	1				
Vertical layer		A series	<u> </u>				Ĕ													
						•	!			Brites					True of	Pecy read	I'm of been ment to surface			I
		2 4	40. 10 Mm 420. 1589 Th	3 2 8	3 ;	9 07 6 1			-	3	1 1 0 10 25 to 0 to	3 0	0 es es		00 100	Z5 tro	0 01 10	800 to 25 to 0 01 to 0 12 0 to	0 10	. 0
Mar errer								0	£ .	<u>ج</u> ع	J.09 .096	.096	_	10 14	QE 640	J.0+	2 6 by m	1099 mb 40°C 2 0 by m in. hr 363.	â	160 kts
-2 g 7 RCS.		*	8	<u>.</u>	F 0	<u>.</u>	-	€	τ,	£ .	0 1 25		J-13	<u> </u>	E - c	024	**	0 :	- 2	0.5 kts
Charles of the	1		land or these ported any chaptersonning		Ē		-	•	7	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	<u></u>	+						a!		. L
}- >t	•	* 600 - myles- 150 a. m	1									-								
	2	(4 FW) (em	20 Mail LA FWC Levelle (* many modificen)	MACANIA .			i jerre La				•	-	i			:				
-	· in your .								→			-								
TA TA STATE OF THE PERSON OF T												_						:		

THE PLANT OF THE PARTY OF THE P	NACT INCH	A A STATE	Samilar Runger	Le prédect	Pagencer Names with Environmental Imia	P. D. W. F. COR. P. J.	erotal lasta									
Segrate leader	P. Mage 12-36 34-10 138-20	2.36 .34.10 138.30		127 Burting	Pastaling Namede 72:090 : 2-10 - 180-06 160-50 F-26 - 11	2.15	80.00	06.09	26 41. 2			-				
Verticel legal	100 to 100 to 1517 to 1	:	r-•	-		-	-	. I	·	- -	1	-			1	
	30	~ • • · · · · · · · · · · · · · · · · ·	-	•		: •	-+	ž			Ā	à	75		ž	ž
	1		. 3	30.02				10 to 12 to 12 to 12 to 12 to 12 to 13 to	0 to	o to	25 to	01 00 ¥	25 to	-	2 3	2
MARIEMAN OF THE	20	0 0: Garage		 2	••••	· - -		6.2	0 2 2 0	-	***************************************	3)-file (age age)	-		160 kts
Servel of the			•	- -	· +			3	Gr 10% Gr 1%	;	· · · · · ·	0 1 mth	0 1 mt 0 2.C		ė. 	S Kits
<u> </u>			• •	*			•	10 mla		1	3	+ T-1	ļ jari	: - - -	+ In mid	
	. 70 to 54 p. cm			Ŧ				Varies	•			Varies	T			
Table 1		* 4	•	-			•	- 20 to	- 20 to 50 n m		•	~ 20 to	~20 to 50 n mi	**********	~ 20 to	- 20 te. 10 ta mil
1	a de la companya de l	k: 	• •		:	••••	; • •	e. 1			•	ž	< Z	· -		* *
**	3 8	* • •		1			: •	1 hra		-	T	3 10.0	3 bre	- -	· · · ·	. srd
×	# Mary 1	•	• • •		-	: -+-		10 mis		•	Ā	10 10	10 110	÷	10 mm min	in in
RFEC.LTS CA AMERICA				7	-	-4		≺ .z.	1	-	Ī	2	< Z		1	

Property and a facility and

Response mentally most and why All Programmental Listed in 2 above whald be meet with the exception of a The R.Y opportung of 20 to 50 a mai. Tentaliste "evadant" has an indial againing of 106 of 50 m into CNA of conset of this Wassing above maintiff have in

"Imparimental and seed over - Balkymoniy and Tital Cloud Amoust - Imaged order state by other means Totalom Nameding - Committee by said Trail

ME PLANED AMP. 4 13 NEWCORF MENTS CONSESSED

							_									
Promote		In the meter	Toni offer													
1		Potne inc.	Form the Bertriag hands				•	•		•	-		→	T	:	
versional layer		Neathern	3						4 2		.		ļ			T
1			. be 14/10			· •	: }	!		· :	! •		+	•		-
		1		·	; ;		÷			•	+	.	+	• •		
Threat I b	•		ă										-			
	· .	Warses - 20 to 50 mm			:	+							-		:	
	~	∀ £	* <		:	•	}		***************************************			<u> </u>	!			
· · · -	į		5	·	: -	· -	; •						+	:		
***************************************	>	17. 1868	5			÷-+	•	+ +		++			+			
-	7	*	*	-				_					-			_

IV -46

		Syderon	•••												 	
		Berndun ver														
AND AND DESCRIPTIONS	1	1	Protest Margar Darriting Seads		:	•	•	1		4	→			-!	-	
	ì	Bothesis mas 4512 th	1 4812 m	born			-		:						J ennes	
;		*			:	: : : :	· •	:				:	:	· ·	- •	
Muzilanda or rise		1	• • •	: :	: :	•	<u>+</u>	•		•	· •			-		
Drame a se	**	「日本日本日本 日 一年 一年 日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本	i i					1		+					<u>.</u>	
1	H	Variable : 20 to 50 m ms		•		· •	+			·••···						
Section and the section	,	· ,	The second secon			÷ -	-			<u> </u>	+			-	· · · · · ·	
	1.8	1100.0			•	<u> </u>	i •	<u>+</u> -	:	-	-			-	+	
	*	4,000		منعود ديات				· · · · · · · · · · · · · · · · · · ·			· ••			· • •	+-+	

APPENDIX IV, PART B. ASSESSMENT SHEETS FOR RESEARCH ACTIVITIES

Panestra	EL.				Č	OCEAN, CRAPHIC	PHIC					_			KE	TEORO	METECHOLOXACAL			
/	Carr	Curr. Curr.	S. Carlot	Sound	Water	Water W. press Ambient Ambient Trans. Wave measurements" Air / times Atmos. Dew Inso-	Ambient	Ambient	Trans	Wave ms	Bauremer	3	in.	ETTA SO	trixos.) a	-osu	Pre-ip. Wind Wind	Wind	£1.rd
Charactern suct	ŧ	peeds		rbeed.	te mp	(depth) light	light.	notee	notee persony	Ŧ	Per	8	o Jung	oiect	n pie	point lation	lation	È	ร์ ซี	p e utic
Geographic toosition		Deep Ocean (60"N to 60"S N. American Coast out to 400 n m.	N 8008 71	America	a Consast or	A to 400 n	ë					-								
Vertical layer	arra	Durface to 5004 in depth	9.00					!		Surface		 			Topo	buoy ma	Top of buoy mass aurisace	20		
Range (5-91 SOA)	9 9 9 0 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.00 to	0 to	4560 to -5 to 5800 tps 48°C	-5 ts 40°C	4560 to -5 to 0 to 10 ⁴ 0 to 2 0 -80 to 5600 tym 40°C psi ly/m -20 db	0 5 2 0 1y/9	!		0 to 190 ft	0 to 1 to 0 to -25 to 0 to 100 ft 40 sec 360° 60°f 10 kg	0 to 360° 60	25 to 02	۽ ڊ	100 to	-25 to	800 to -25 to 6 11 to 0-12 0 10 0 150 1050 1050 1099 mb 40.4°C 2 0 by m in. hr 360* 150 kts	0-12 in.' hr	9.5	0.3c 150 kts
Max error (5-yr 80A)	\$	0.03 kts	6.03 kts 6.01 0/00 1 3/2]	0.01 °C 0 13	6 13	.	3 0	22	0.2 ft 0.1 sec or 105 or 13	or 105 or 1%	0	 	01 kg (de I	→ 2 €	<u>.</u>	9.01 2*	• 2	0.7 kts 0.7 %
Duration of ob.	3	last, or Short period avg. (Repres	1od avg. (Re	presentative	Ê					-	1		4	-	7	1	****]	
¥, ¥	-	≤ 600 B. md/100-150 t. m	-150 t. m									-			-			:		
Se modified	20 Sec.	20 98d, IAPBO levels (* near buttum)	els (. pear l	bottom)			? leve.s			Burtace		-								
L	Thme 6 kmg	6 kraf 2re																		-
Car grande X V	1 1 0 X	1										+	-	-			-			

C.b. spech. X,Y, (7) 10 min, (2 min) .xcludes Measurements of Swells

lv -49

2. REFINED AMO * 5 REQUIREMENTS U.S. Army-Coas	MO# 5	REQUI	TREMENTS	U.S. Army-	Countal E.	ital Eagmeertug						
Geographic location	location		Const, Haw	N. A. Coast, Hawaii, Creat Lakes	•	Where Depth : 125 m				· American de Caracter de Company de Caracter de Caracter de Caracter de Caracter de Caracter de Caracter de C		
Vertical layer	Jæ.))))	Stc Stc		- S	Sfc	B. C.				Sfc	Sfe
Range		0 % 0 %	0 06 to		1 - 4	-5 to	1 20 50 18	1 tc 30 sec	0 to -25 to	-25 to 60°C	0.10	, to low kts
Maximem error	error	. 2	0.03 kts or 19.		0	0.01 •C	0.2 ft	0.2 ft 9.1 sec or 5% or 5%	9	0.1•C		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Deretton of ob-	8	\rangle \square \qqqqq \qqqqq \qqqqq \qqqqq \qqqqq \qqqqq \qqqqq \qqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqq \qqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqq \qqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqqq \qqq \qqq	≥ 10 mtm		V! 6	s 10	10 min		1	\$10 Bitu	Alm of	to min to min
-	×. ×	≥ 506	.s 500 B. B.		V: c	. 500 m	≥ 50€ ≥ 50€		11		06%	
Sampling Interacty	2	A ×	N/A		Z	W/X	N/A				W/N	- X
····	£ 000	e tr	6 hrs		•	6 hrs	6 hrs		+	0	£	6 515
40	X, Y	5 mda	5 Ealin		20	5 min	5 min			\$	ofter c	
}	~	N/A	N/A	_	Z	A/X	*/ E		<u> </u>		4 ×	2

3 RESULTS OF ARESENDENT

Requirements fully men

Requirements partially not and why: All requirements listed in 2 above would be met with the exception of a The 5-min synch. of ob: Tentative "system" allows 10 min.

ASRESSMENT SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVELY PROPOSED NDB6 SENSYG CAPABILITIES	LY PROP	OBED M	DES SENE	MG CAPAB	UTIES														Parry	Revised 20 Aug '68	5. 3
-	Parameters					5	OCEANOGRAPHIC	PHIC					-		-	¥	FTEORG	METEOBOLOXACAL			
/		Curr. Curr	Cerr	Salisate	Sound	Water	Water W press Ambient Ambier Trans-	Ambient	Amble	7.20	Wave II	Wave measurements		ij	Atmos	Atmos Atmos Dew land	***	lawo T	Precip	Wind Wind	W Land
Charateristics	80	₫r.	speed	Ì	alternation of	temp.	temp. (dap.//)	light	uckee parency	parency	¥	75.		du o	siect press	<u> </u>	point lation	lation	3	dir appe	
Osogruphic Joostles	contion	O design	(80.)	Deep Ocean (60.N to 60.8 N. American Const out to 400 n. mi	. America	Const or	cons const cut to 400 n. mi	Ē													
Vertical layer	i i	Surface	Surface to 5000 m depth	dept				! !			Burlan		-			Top of	the second	True of bacy ment to aurface	ځ .		->
Range (5-yr 80A)	80A)	0 to	0.05 to 30 tota	0 to	4500 to -5 to 5600 tps 40°C	-5 to	-5 to 0 to 10° 0 to 2 0 -80 to 0 to 50 0 to 70%	0 to 2 0 by/sm	-An to -20 db	0.50 70%/m	0 to	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 to	25 to	010	100 to	25 60	10 to 10 0 to 25 to 10 to 100 to 100 to 100 to 100 to 10 to 10 to 100 to	0-12 in, hr	0 to 0 to 360*10	0 to 160 eto
Max error (5 97 SOA)	_	\$3	0.03 kts	0.01 0/00	ğ. 	0.01°C 0.1%	0.19	2.5	6	Ŕ	0.2 fb 0.1 mer	21 20	÷	0.1	, K	: E	¥	0.2 fb 0.1 sec fr 0.1 °C 0.1 % 0.1 mb 0.2 °C 14 0.61 or 10 or 15	0.63 10. h		# 12 to
Darridge of co.	8	1	Short per	inst. or Short period arg. (Sepresent	presentative	î				7	T	-		<u>-</u>		-		-		-	
	х.ч	€ 600 B	S 600 B. BE 100-185 B. BM	186 a. md							A STATE OF THE STA							:			·-
To mp to ag	Z	20 Sed.	LA PBO lem	20 Std. IAPBO levels (+ near brittom)	brettom)			2 levels			Surface	1				:	:				1
	- 1386	· kry kra	£										-		:	:			:	:	
Ob. sysch. [K,Y, (2) 10 mm, (1 mm)	X,Y, (2)	10 2254,	(1 mdm)							The second section of the second section is a second section of the second section in the second section is a second section of the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a second section in the second section in the second section is a section in the second section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section is a section in the section in the section in the section in the section is a section in the section in the section in the section in the section in the section in the section in the section i		-	-	1 .					:		

'includes Measurements of Swells

2. REFINED AND \$ 6 REQUIREMENTS U.S. AFRY-- Lake Sursay

IV-51

	,		The state of the s									
Osegraphic location	ocetton	Great Labor	Labne									
Vertical layer	i. E	Sec to bottom	Me to Me to	¥. 2	c to	3#C	38	Be	32 5	Sec to	Mc	to Bire to
Range		0 to	o f St	3 -1	-1 to	3 to 4	2 10	0 00	-10 to	07 00 d	6 5 6 2 7 8	E 3 .
Maximum error	11.06	200	0.2 kts	Ĭ.	0	1.5	1.5 ft 0.5 perc 20*		2	my Caro	106	
Deration of ob.	-8	1 male	1 mdn	Inst	16	5 mile	5 min 5 min	5 min lust	lust	linet		· · · · · · · · · · · · · · · · · · ·
	X,Y	27.5	27.5	27.5	12	27.5	-			27.5	2.4	+
1		8	n. m1	á	ini	. a				r.		
interestry	2	1 120	0	-	8	N/A			•	N/A		, .
	F	1 br	3 br	-	1 br	6 hra	6 hrs	6 hrs 1 hr	1 hr	, hr		1 År 1 År
O gwech	×. ×	6 min	t mdn	19	6 talts	etan 8			1	8 mer.		
	2	6 min	क्ष कांक	9	6 min	6 min				S min		: 6 : 4
					The state of the s		- A					:

3. RESULTS OF ASSESSMENT

Requirements fully met:

Requirements partially met and why

Mequirensents not ment and why All requirements listed: Tentative "system" does not include the Great Lakes. Further investigation of regulrements in this area is needed

"These are 1967 data requirements, not refined.

2

Parameter		-	The second secon				-	
		Water Sevel						
Geo. location	g	Great Lakes	:				:	
Vertical layer	•) MC					:	
S.		-1 to 4 m						
Madames error	P	30 80						
Darration of ob.	8	*						
	×	# #						
Î.	3	N/A						
	Ą	1 br						
1	χ. Υ	6 mein		-				
	2	d meta.						

PARAMETE	E CCNE	PARAMETERS CONSIDERED BETOND THE S-TR STATE C	TECT S-TI	RETATE	OP THES AR	IT FOR THE	FERTATIV	RLT PROPC	MED DATA	P THE ART FOR THE TENTATIVELT PROPONED DATA BUOY ST STEM			[
Parameter											 		
Geo. Incutton													
Vertical layer	¥												
,													
HELDER GETTE	From												
Deretter of ob.	e e												
	х, т												
Sam dag interity	2												
	Time												
to the	х, х												
	2												 1
Remark a ries				İ	:								

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

Z.	Para destare					5	OCEANOGRAPHIC	PHIC								7	ETEORO	AETEOROLOGICAL			
/		Cerr. Cure.	Ogre.			Water	W. press.	Amblend	Ambient	Trans-	Wave II	Kateu reme	i i	_	Atmos.	Atmos. Atn. a. Dew Inso-	Dear	-0641	Precip. Wind	Wind.	Wind
Characteriotic	/	dir.	peed		•	On the	temp. (depth) Light, soline parency Ht. Per. Dir. temp.	E S	and see	parency	£	ž	ă		• lect	elect. press.	N N	intion	r er	¥.	Page
Goggraphie losethm	Complement	0	00 M. 00 and	Dasp Ocean (60°N to 60°ByN. America	America	Count	to Count out to 400 n. mil	i													
Vertical layer	N. C.	Bertace	Surface to 5000 m depth	4							Skriace					Topo	buoy m	Top of buoy mest to surface	8		
Bases (5-yr 80A)	ÝQ.	9	3 80.0	9 0	4500 to	i i	10 to 10	0 to 2.0 -80 to	-80 %	010	0 to	- to	o te	0 tc -25 to 0 to		9 00 tc	-25 to	800 tc -25 to 0.01 to	0-12	0 to	o to
•		ò	10 10	430/00	\$ 00 th	ာ ပ	Ę	#/#	-10 0	70%/m	8	_	.090	360° 60°C 10 kv	10 kg	1089 map	3.04	1089 mm 40°C 2 v ly/m	in./ br	-096	140 kts
Mes error			0.88 Es	0.61 0/ns 1 fps	ā	9.01 7 10.19	0.14	14	3 65	*	0.2 %	0.2 fb. 0.1 mec 5*	_) ic	0.2	0 1-C .02 ky 0.1 mb	0.2°C 14	7.	0.0	5,	0.5 838
(\$-yr 80A)			a 15							_	or 10#	% to							to./ hr		01 30
Dereiton of ob.	8	A A	Tank Park	back, or Short parted ang. (Sepressed	-	(L								Ì)
	X.Y	ы 8	S 676 B 100-150 B.	-180 n. mc																	
	Z	20 State	IA PBC len	20 Std. IA FEC levels (+ sear bottom)	bettom)			2 levels			Berthos										
	Time	in the sea) bro																		

2. EZALZZO AMO + 8. MAGUINEMENTO DEF. GENERALO	•	10	THE REAL PROPERTY.	MILE, CAN	1	o moutane	MODELICE OR WEST MARKET										
Congruente boutte		Out a	Mercioo	Oalf of Mention and Caribboan	Я												
Vertical layer	ž	+ # 200 £	306 ·	Re to		Sec to			2 to 10		3%c		Sfc			Sfc	Sfc
3		0 to	3 1	20 to 40 c/co	-	0 to			0 to 1		0 6 2•83	. p	906 to 0 to 1089 mab 45°C	0 to	0 to 5 0 by/w	0 to	0 to 150 kts
Maximum crrw	E	10.	0.08 the	0.91 0,00		0.01 °C			20%		ē	0.1°C	0.2 mb	J.8'0	0.5 ly/m	•0.	1 kt or 5 4
Derritor of ob-	8	\$ 10			,	o1 ≥			5 10		01 5	0	≥ 10		•	01 >	- 10
		-			-	9			1		er er	-	aga			nim	min
مروم سند رد	ķ.	100 H	18	T Rel	-		 	 		1	<u> </u> 	-				-	
Branching Laborator	N	\$ 00 t	. 00 s	118.	Z.			<u> </u>	70 m		× ×		N/A		•	N/A	N/A
	į.	e kr				. L.			6 bre		8	E. F	6 hrs			6 hrs	6 ars
6	X.Y	20 anda				¥.			30 min		08	30 min	30 min		ŧ	30 min	30 min
	2	30 min		T	-	upm 9≰			30 meta		Y/N		N/A		•	V/N	N/A
1. RESULTS OF AMERI	OF ASSESS	EW.				,											

Requirements fully met:

sepairements partially not and why: All rest strends litting in 2 above wo. 4 be most with the exception of

The X., Y specing of 10-und 50 a. mi (CNA) and 100 n. mi when in DC: The testative "system" has a specing of 100—150 n. mi (CNA) and 500 n. mi (LN).

The range of 0 to 5.0 ky/m for incelesioner: Testative "system" has a realistic top value of 2.0 ky/m.

The 4 additional depths for insuperstrate and salisity: Testative "system" only covers the 20 IAPSO levels plus the bottom.

Regulamentale not most und orby:

• Total stous amount: Judged bestor done by other menne
• Onygen: Descripting about ob. from oney mastended for long periods:

,

GREY ARE	A" PARAN	CETERS NC / 18	"GREY AREA" PARAMETERS NC / IN QUESTION FOR IT	THE TENTATIVELY PROPOSED DATA BUOY SYSTEM	OPOSED DAT	A BUOY SYS	TEM			ě ^s	Partitled 20 Aug. 6
lane manage		Total cloud	Oxygen			_					
Geo. location		Oulf of Mexico, Caribbean	o, Caribbean						 		
Vertical layer	iyer	38	offe to ar bot		-						
1		્રા છ ાયે	2 to 6 mal/1								
AND STREET,	error	10%	0.5 ml/l		-						
Deretton of ob	8	s 10 rates	≥ 10 min		-						
	¥.	10 t. til bill 2 5000 50 t. ml off shore 190 n. ml deso water	bore vater			-	 				
Bennetting interestry	2	38 6	IAPBO + 125, 175, 250, 1200	# 0							
	į	6 hrs	6 hrz								
Ob. eyach.	*	30 min	30 min								
	2	V/X	30 min								

Purameter Geo location Vertical layer					-	_	
Geo. location		,	 	··· ,	~==		
Vertical layer						7	7
			_				-
P. C. C. C. C. C. C. C. C. C. C. C. C. C.							-
Maximum error							
Duration of ob.							
×. ×							<u> </u>
Semestry 2							-
Time							
Y. Y.							
Z							-

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVELY PROPOSED NOBS SEMBING CAPABILITES	ILY PROP	OKED WE	100 SE HOR	NG CAPABI	1 LTTES														Rev	Revised 20 Aug 'SE	38, 381
2 /	Para sectors					0	OCE ANOGRA PHIC	PHIC								X	ETEORO	METEOROLOGICAL			
/		Cuer. Cuer.	5	1	Pos Contract	Water	Water W press Ambient Ambiens Trans-	Ambient	A minimises	Trans-	Wave III	Wave meadurements*		AI.	Atmos Atmos	Atmos	Daw inso-	-5 88 C-	Prescip	Wind	Will
Characteri elics	200	A.				de la constant	(depth)	light	# C) #	parency	Ht.	Per	Š	î B	elect	p7448	posit	lation	3	ਰ	p eads
Onographic location	location	0	4.00)	Party Charles (#07 W to 80 Feb.) A President Const out to 400 n nd	America	T COBSE OF	# 50 400 B	E													
Vertical layer	200	Skrface	Surface to 5000 m depth	depth							Burface		-			T dia	been ma	Top of busy mast to surface	8		
Ramps (5-yr 504.)	Š	9	0 85	S O	4500 to	-5 to 0 to 10	0 to 104	0 to 2 0	06-	9.0	010	1 10	0;0	25 to 6 to	i	600 to	. 25 to	25 to 0.01 to	91-0	o to	o 10
		ż	200	420/00	5800 fps	10°C	Z	E/E	10	10%/B	8	40 sec 360- 60-C	• 090		40	1389 mp	40.C	40.C 20 ly m	to., br	.0 9 0	160 ats
Max error		;	9 03 10.0	9.03 tas 0.01 0/00 1 tpe	\$	0 01 10	510	1.1	600	₹.	0.2 fb	0.1 sec 5*		0 1 ·C	01 17	0 1 mmb 0.2 °C	0.24	5.	0.01	•2	0.5 kts
(5-yr 80A)		_	15								OF 104 OF 14	# 15 5							ъ. Ат		Æ to
Dereston of de-	8	1 mm	-	lant, or Gast period any, (Reproses	sprocessie div	Î															
	X. Y	× 4.00 B	\$ 400 n. may 100-150 n. 1	-150 a =									_								
To see the see of	M	N	LA PBO jer	20 Std. IA PBO jevele (* 1982 battem)	battom)			ale red s			Burtace										-
	F.	· A species	L										-								
Ob. oynech. X.Y. (2) 19 mets, (1 mets	X.Y. @	19 mdm	Î																		

Vertical layer die to Sic S	Ossgraphe besides	To the same of	Tropie	al Athanti	to . Out of Mexi	00 20°N to 2	Tropical Atlantic - Oald of Mexico 20"N to 20"8 (not in Major Currents or Areas of Special Interest)	(Special Interest)		AND THE RESIDENCE OF THE PROPERTY OF THE PROPE		
0 to 0 2 2 to 2 2 5 to 2	Vertices la	J.R.	200 to		•	3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0			Sec.	Sfc	Sfc	<u>ي</u> 20
10 10 11 12 12 13 14 15 15 15 15 15 15 15	4		9 °	}	20 E	8 8 5			10 to 35 °C	0 015 to	9 10	5 to 200 kts
4.0. 1 min superation min superation min superation min superation 1	Meri seus	FTTOE	10.	0 1 td	6.1 %	0 4-6			J•1	1.54	20.	S Xte or
X,Y 590 500 <td>Deres a</td> <td>8</td> <td>l min</td> <td></td> <td></td> <td>L main</td> <td></td> <td></td> <td>l min</td> <td>min</td> <td>i min</td> <td>l min Bvg</td>	Deres a	8	l min			L main			l min	min	i min	l min Bvg
Z 3 Modes 1 Apple or 12 hrs ></td> <td>X,Y</td> <td>200</td> <td></td> <td>•</td> <td>8,</td> <td></td> <td></td> <td>200</td> <td>200</td> <td>200</td> <td>200</td>		X,Y	200		•	8,			200	200	200	200
Z 1APRO NA N/A	1				-	1 m				j e i c	Ē	ı.
Time 24 hre 24 hre 12 hre 10 hre <td>1</td> <td>z</td> <td># 34.4×</td> <td></td> <td></td> <td>Ç M∆±</td> <td></td> <td></td> <td>K/X</td> <td>W/W</td> <td>٧ ٧</td> <td>£, N</td>	1	z	# 34.4×			Ç M∆±			K/X	W/W	٧ ٧	£, N
X.Y 10 min 10 mi		t.	24 hrs	24 hrs	12 hrs	12 hm			12 hrs	12 hrs	12.5	12 hrs
V/N V/N qual 2	6	X. Y	10 conta			S S			10 min	10 mln	10 E	10 man
	•	2	4		•	inta i			N/A	V/V	4	7 7

Seguroments fally met

legativaments partially seet and why All requirements listed in 2 above would be met with the exception of

• The wind speed range to 200 kts. Tentative "system" has a realistic value of 160 kts.

• I as insolation range to 2.55 ky/m. Tentative "system" has a realistic value of 2.0 ky/m.

• The X, Y specing of 500 n. ms. Tentative "system" has a initial specing of 600 n. m.

Insultrements not make and why:

Oncygen: Uncertainty about ob from beoy unabsended for long periods

Upper-air Whad Countdered beyond 5-yr buoy SOA.

REQUIREMENTS (Continued) REFINED AJEO + SA

CREY AREA	PARAK	SET ERS HOW IN	"GREY AREA" PARAMETERS HOW IN QUESTION FOR THE TENTATIVELY PROPOSED DATA BUOY SYSTEM	THE TENTATIV	ELY PROPOSE	ED DATA BUUY	SYSTEM			ž	Revised 20 Aug. 69
Parameter		Ougges									
Caro location		Same as page	1								
Vertical layer	10.	MC to 500 m									
}		0.5 to 7 m1/1									
erre	ş	0.1 - 1/1									
Duration of the	1	I min avg									
	, K	\$00 h. mi									
ij	*	IA PBO gad lerre la									
	į	12 krs									
1	X, Y	10 mtm									
	22	l mán									

Permanent What opposed Gas. Jacobses. Section 15 no 15 m to top of Newp 5 to 200 kts Maximum Arror 8 kts or 5% Durades of th	W.Ind						
	-						
	1	1	1				
	15 m to cop of trade where						
	.0 00 3460-						
	.02						
	I mis avg.						
х, т 566 р. mi	506 n. m.						
independent 2 Unicoura	Unkann						
Thus 12 hrs	12 km						
X, Y 10 main	10 min						
atan 1 2	منده ا						

-

TENTATIVE LY PROPOSED RING SENSING CAPABILITIES	SOLU III	CARD HI	をおいる	NG CAPAIN	LITTES															Revised 20 Aug '68	99, 3 €4
₽ 	Para medera					ð	OCEANOGRAPHIC	PHEC								Ī	ETEORC	METEOROLOGICAL			
/		Curr. Curr.	Ogra	-	1	Waher	Water W. press. Ambient	A motions	Ambient Trans-	Trans-	Wave In	Wave measurements*	į	_	Atmos.	Atmos. Atmos.	Dew		Precip.	Wind	Wind
Characteristics	3	dr.			Descri		(despth)	Light	DOL SE	parency	#.	ž.	Int.	e mp.	e lect.	bress	potnt	letton	rkve	Ĥ.	peadu
Gengraphie beneben			(.00)	Deep Owns (60° H to 60°E) M. American Const out to 400 n. mi	. Assertions	Const o	4 to 400 n	ē													
Vertical layer	į	Perfece	Sertace to SCOO in depth	4							Berface					Tag	buoy en	Top of buoy mast to surfac	31		
Part (Pyr MOA)	ğ	8	3	o to	4500 to	6 6	0 to 104	0 to 2.0 -80 to	ı	310	9 60	1 to 0 to -25 to	0 5	-25 to	3	800 to -25 to 0.01 to	og 52-	0.01 to	0-12	0 to	0 to
		ż	10 Mag	42 6/90	1 8 g	0.0+	Pet	14/m	-20 @p	7 0% /80	100 tz	40 mmc. 360* 60*C	.096	_	10 kv	1099 mb	J.0+	40.C 2.0 ly/m	in./ hr	.986	160 kts
Mas errue		:		0.01 0/00	Į.	0.01 -C 0 1%	0 1%	14	3 400	2	0.3 fb	0.2 ft 0.1 sec 5*	5.	0.1 °C	va 10.	1 0	0.2.0	14	0.01	.2	e s icts
15 9T 8'M.			a 15								OF 10% OF 1%	Ø 1%	-						in. hr		
Darrides of	•	1	in the	bat. er Meet pertod evg. (Represent)	Marco A	(0.00															
	X.Y	*	× 000 2. m/100-150 2. m	150 a. m																	
	2	Į X	A PEO LOT	20 SM. LAPEG Lavels (* mear bottom)	bottom)			2 Mercile			Surface										
	a L	ang yang e	r.																		
Ch. synch. X.Y. (2) 10 mts, (1 mts)	X.Y. @		(1 m)																		
					֡																

2. REFININD AMO # 88 NEGULERINETE BCF, Masset-Research on Tune in Tropical Atlantic, etc.	88 + O#	MEGOL		BCF, Manne	Resear	ch on Tune in T	Topical Atlan	the, etc.					
Occupyraphia besetten	-	Trapto	Athenta	c (ta Areas of !	Special	merest like Ma	ijor Current i	alsi to eat bar	Tropical Atlantic (in Areas of Special Interest libs Major Current and Lee of Islands) 20°N to 20°8	9.0			
Vertices Layer	¥	3				Sec to			-				
		500 m			-9	500 m			-		28c	. S¥c	Ste
1		8	0.2 %	20 20	*	3					10 to	910	ot e
		.098	4	90 op	*	2•C					\$.c	360	200 Kts
Meximum error	rroe	10•	0.1 kg	0.1 %	,	0.4°C					2.1	20.	5 kts or
Dunible of th	8	4			-	1 and a					1 min	aim !	l mir
					-	· Las					B v g.	AVE.	20.00
	×	10-30			_	20-30					10-30	105	1050 10-3
						1					n. mi	In. mi	ı m
İ	2	∞			a.⊆.a.	osd X		_			N/A	N/A	
	r E	5	5	5	•	F					3 hre	3 hrs	3 hrs
8	¥, Y	10 844			_1	10 wates					10 min	10 m	10 males 10 min
	2	1		Ŧ	-1	l mata					N/A [A/A	A.A

A RESULTS OF AMERICANT

Departments fally man:

- Requirements partially not and why. All req. ments bished in 2 above would be not with the exception of

 The wind speed range to 200 kts. Testative "system" has resilistic value of 160 kts.

 The X, Y specing of 16—30 s. mi in DO. Testative "system" has a specing of 600 s. mi.

 The 3-br frequency of ob. Testative "system" is 6 br (3 hr could be met by mixor operational change).

- Regularization and most and why:

 Crypton: Discornalisty about ob. from busy maximised for long periods

 Opportals What: Considered beyond 5-72 busy 80A.

Page 1

TOREY ARE	A PARA	TORET AREA! PARAMET FRE HOW IN QUESTION FOR	UBSTRIN FOR THE TENTATIVELY PROPOSED DATA BUOY SYSTEM	DATA BUOY SYSTEM		•
Permenen		- Stáro				Revised 20 Aug.
One incution	9	Bame as page 2		~		
Vertical layer	t) at	Bife to 500 m				
†		0.5 to 7 an 1/1				
Martinian error	P. L.	6.1 mL/1				
Derutton of ab		I sale avg.				
	×	X. Y 16 36 B. M.				
łį	r.	C				
	į	5				4 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Ca syark	×	10 min				
	•	-			-	_

				778		
Personal		Pined appear	firection			
Geo laceries		-	1	THE COLUMN TWO IS NOT THE OWNER OF THE PARTY	Ţ	
Vertical is.		15 m to top of tracks clarks	Curade etade	and the second s		
ţ		5 to 200 Pts	0 to 360			
Martiness error	B 1.48	S has are 6%	30.			
Darration of th	ation of the	Le eta :	Las ata 1			
	, x	X, Y 10-30 s. ms 10-30 s. ms	10-30			
li	2	Unacon	Catalogia		37 67 67	
	1	5	3 8.00			
	×	10 min	M= 01	The second contract of the second contract of		

~ \$

The second control of the second control of the second sec						***************************************												Ę	Kery I and 20 Aug 68	ř
An elect	_				:	K PAMCAIRAPHIC	PHIC								X	Trong	METROROLOGICAL.			
	÷ .	Curr Curr	The Broken	j	W. B. Be 7	Walter 'S press Coleman Ambient Trans	Carriente.	A makitama	Trans	Wave on	Wave measurements. Ar Atmos Atmos Dew Inso	.9	₹ ~		9561	340	Inst	Precip Wind Wind	7	9
Characterisations.	*			I	1	Ages .	Š	**	brase parency	£	į	5		elect press	- -	pour lation	lation .	5	ż	Descri
Compression leading		2 W	Comme Contract to September American	A		Court and to 460 to ma	147			- Tanana		-				-				
Vortee by	-	Arrham to Ass or toph	1	:						Britage				•	To do to	buoy max	Top of bury mant to surface			!
Road IS ye Vik.	. S.	the cut to other		3 00.53	-	100 C SE O	01.010	33	3 0	150	9 to 1 to 6 to 5 to 10 to	i te	a		- SE GE	z. tu. [- 21 For 11	NO 10 25 to 0 10 to 10 to 10 to	2	010
	ž.	- -	2 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	3	J. 04	Ī	5		4 /% L	100 ft 40 mmc 350* 80*C 10 kv	o 1 0 2	.096	5.		QL S	J.03	E M : 2	1089 mm 40°C 2 0 by m 1a., hr	÷	160 Fts
Mar spros	:	0 83 KM	8	1			Ξ.	4	Υ.	- T	02 m 01 mm 5. 01.c	<u>ه</u> د :	<u>-</u> -:-	0 1 1	É	9.5 C 113	· "	10.0	•	× × ×
(141 WW)		<u>*</u>								PI 75 KII 30	9r 19							Б.		₹
Direct of the	1	Tank to	part of Manth perfect neg in had	-	Ĩ					•		-		•	-	•	-,	•		
*	•	3 000 a meline 156 a	11	:		:			; {	1		•	1							÷
***	1	THOM Y	TO MAL LA PEG laverales (* 1664 e bestroom)	Perthona)	:	· ·	2			Perten					!					
1		Ę										+		1	!			1	:	:
(B open X.7 (B) 10 mm. (1	:	1					1		:	:		:	:					!	:	1
Water Street, or other Persons and Persons												٠								

Total Park	1	September 1	Combinents! The F Majne to Texas on	as ord to a Maximum	turn . Negota of 200 m				The second secon
Verticus layer		The ten beneficions	-	200 m	1 000 1 000 1 000	200 m	986		Sir Sfe
\$ ~	a X	8.00 03 to 40 0	3 C .	3 %	07.5	0 10	2 6	25.50	
Part New York	•		,	9.80	* * -	r.	0	3-10	20* 15 848 of
Darra w &	· · · · · · · · · · · · · · · · · · ·	e 2.0	1	0 10		21	01.	• 01	
	> = = = = = = = = = = = = = = = = = = =	90	1	98	8-	8-	81	+	
Yatus					7	Ē		ē	-
*		La	•	IN PARTY	2 byla	<u>•</u>	K/X		
	1	Ę	Ŧ .	, tr y	E di	# 14 pp	3 hrs		The state of the s
Water &) i	S. Philas	1	10	Tr moto	10 11 10	10	10 main	the company of the formula
		Med/h	Ŧ		a, a,	a part	</td <td></td> <td> </td>		

Bequirements helby mat. All requirements listed in 2 above

Requirements partially met and why

Ŀ

							the partition of the Parties of the Parties of	 		1	 		-	
Partement		L	La La La La La La La La La La La La La L	-		- 4				·	···•			
**************************************		en er en g								•		:	•	
Sarah Si Cayne		Mr. 11. 200 us		p •	.	. —. .	•••••		- 14				•	
į		3 C - 13 Page	-											
			•		•	•	•	·	·	•	•	•	•	
Darage / Sh	4	# # 	•		.				: : +		•	:	:	
:) 	# 98	•	1		•		· •		• ·	•	+		
		CARREL PARTY OF					•		· •	 -			•	
	ì	• .ce				•			-				B 7	
•	, ×	51		•		+	•	·	+	•	<u>.</u>	•	-	
	. *	11.12	•			.			<u>-</u>		: :	.		

	L
	Ĭ
	1
	Ĺ
	-
	i
	i
	1
	ķ.,
7	1
•	
F	i
-	i
*	1
≥-	
- 5	1
	1
	-
- ≦	ļ
~	Į.
4	1
_	ļ
-	1
*	Į
Z	:
- 5	L
×	7
3	1
-	1
-	į
- 5	į
E	1
- 2	!
-	ļ
X	-
2	1
	ł
÷.	i
-	1
*	
2	
-	1
×	ļ
<	ŧ
-	1
- 3	1
_	1
-	-
~	1
~	:
- 2	-
_	ì
à.	1
*	;
~	1
eA.	į
-	i
×	i
-	:
÷	•
z	
Ξ	:
54	
*	i
⊇	1
=	:
, a	:
Ξ	<u>.</u>
- 3	
Ŧ	÷
~	
3	
Ξ	
HANDERS COMMISSION DESCRIPTION OF THE STATE	A CONTRACTOR OF THE PROPERTY O
•	
3	
- 2	

Personnel Properties and the Colonial C	V V V V V V V V V V V V V V V V V V V
A THATA TIVELLY DATE IN THE TA	THE THAT A TANK THE T
MALE DATA BEON STATEM	AND THE PROPERTY OF THE PROPER
The state of the s	

e alima

ASSESSED THE SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVELY PROPORED HIME CEMBERS CAPABILITIES	KYNA A'1:	CHEE IS NOT	25 SEC.	THE CAPA	MUTTER														ž	1 20 Z	Revised 20 Aug 68
The state of the s	-		:			1	IK BANCKARAPHIC	:		The same of the sa	-					Ž	TROFE	METPORCHCKACAL			
		Carry Carry				3	Water Wilmes Audient Analisate Trans Nave measurements	A makes on t	Amadaland	17.00	******	FACT BY D. G. BA		¥ 114	Atme Atmos		Des.	las:	Prescip Wind	3	3
Charactebook	i	ě	•	Î		1	day.	2	1 F. 2	S remain	£	10.4		<u>.</u>	elect press		E E	iati on	Š	ŧ	Dearty
Cargonythe Combin			. 440	Change Chance 267' H to Co'Ty an A second	4	A COMM	Comment and by 400 a gra	e gradient de la company de la		The second second			_								
Vertiland large.	ì	1	Berthan is term in the	1							Sheface					Top is	Paucry ma	Top of lougy mast to surface	ž		ſ
Martin Str.	3	Š Š	3 kg 2 38 to 5 to 5 to 360.	10 Mps 42 0.	3 8 2 3	. · · ·	3 8	0 to 10 0 to 10 to	3.4	3 %	2 S	19 to 19 19 19 19 19 19 19 19 19 19 19 19 19	9 to 75 to			tion to	ot 57	2 0 1 to 2	1099 mb 40-C 2 0 b m 10, hr 360-	i i	0 to 160 ktg
Man orrus			4 32 kda	# 35 kts G 91 6 G 1 fp-	1	9 61 4	<u>.</u>		*	T.	- 5 H	0.2 ft 0.1 mm		J. ! B	- 1 - 0	î	1.2 °C 1.1	-	0,01	• • •	54 5 to
. A. 7. B. M.			¥ .							- •	JA 1074 OR 13	61 13 61 13	_		.,		_		, n		i i
Darren & &	4	1	1	a these period ory . Les						:		i	-	•	•	•	•			•	
·	*	•	*	* *** *** *** * *** *								,	-								
	**	1	BIS. (A PRIC) Law	No Mer. ca. PMO Levelle :- see,r terthode:	(mithem)			-	:		Mertade		-	:				į			
	Ę	-	1				:	:	•	:	:								:		
TANK TANK OF THE PARTY OF THE P	- X	:	1						:								:				1

-	•	Katemaries . A	Kotsskrives - Mears Maries Arresta Cas	1	Cod to frama									
Vacriboni layer	į	Me to	•	* *	Wife to Designorm	Me to Dottore	Sec to	• • • • • • • • • • • • • • • • • • •		ij	· -	-	Sfc	! Ž
}		20.0	34 4	N 4	3.3 2.3	0 : 33 6	7.0%	-		3 22 E	·		. 0 gr	J to 120 sts
	2				•	*	i.	, 	: - +	3.10	· • · · · · · · ·			5 kts or
Paral A	•	- 1	•			4		<u> </u>	i 	e e	•	·		
	+	WHILL YELLY BICK	Will yary with arons of interest	1	1	•		! • • •	₽.		+ +	• •		,
P. Sept. 4	N	At present lin	At presente limits of specing are ad	The Most Minder			- 1	. 		-		-+-		
	į	3 823	•	Ţ.	1 hre	1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3 87		<u>.</u>	3 hrs				
) h.	10 m/m	+	• c.	10 min	10 antas	10 300.0	+-	+	10 made	* · · · ·		le min te min	in mir
	~	1	1			1 1823	- creu	•	· -	+	÷	*		7

Requirements Main men

Augustramente partieils mes and why

Magnifications and seek and effer to All Properties and representable fundable for include the start above or entual time and a seek and the start and requirements in these areas and appeting its eartest.

FINED AMO 4 11 REQUIREMENTS Continued)

							<u> </u>	 				
Weer N Y Z S S S S S S S S S S S S S S S S S S	Ptrumeter		Orgen		-							
X, Y X	Geo Jocany	8	Same as pg.	The same and and and and and and and and and and		•	1			 	-	
7. X . Y . X . X . X . X . X . X . X . X	Vertical lay	ver	Sic to hottom								!	
7 X X X X X X X X X X X X X X X X X X X	Range		on) o 51 out o					:				
7. X 3. Y X X X X X X X X X X X X X X X X X X	Martin um o	i.c.o.c	0.4 c									
7. X	Duration of	18	≥ 10 min									
2 em; X		χ. Υ	Verios									
7.me	Sampling interestry	2	Varies									
×		, rae	3 hrs									
	do Averch	×	10 main									
, Z	(a	Z	1 min					-	-			-

Parameter		Plankton									_		
Geo. location		क्रिया कर विदेश	,			—	4		+	4	7		
Vertical layer		offe to bottom		-				-	-		-		
Range		0 to 1% composition											:
Maximum error	ğ	5% amount of water with 0.1 mm meeh.	value r mesh								-		
Duration of ob-	٩	Daily for (\$ 10 min) weekly average	10 min)								+		
	×. ×	Varies								:		: : :	
Sampling intensity	2	Varios									-		
<u>L</u>	, EB	ra br					-				-		-
1	X. Y	10 min			+-			-	+	•	:		-
3	8	l enter									1	1	

ABILITES.
NG CAP
CHARGE SENSO
POSPID NI
ELY PRO
V 1 V

tentatively proposed ndbs sensing capabilities	ELY PROP	OSED N	DES SENSI	ING CAPAB	11.7 TES														HOP	HOVERN 20 ANE 'GR	55. 35.
 	Para moters						CEANCGRAPHIC	APHIC								2	TEORO	MENTEOROPOXACAL			
		Curr	Curr. Curr.	200	Sound	Water	Water W preas Ambient Ambient Trans Ways measurements" Air	Ambient	Ambient	Trend	Ways II	MAIN THE LOS	: 52		Strace	Stress Atmm	Dow Toko	Inse.	precip	M	B. Said
Cauracteristics	tics	Đ.	peedu		append	en en	depth	Hg.I	noion	Appeared	Ŧ	Por INT		Ê	elect press	breas	E por	lation	rate	ŧ	Berend
Osseptraphic l. Aca.	i de	D cycle	-09) usea	Deep Ocean (60-N to 60-8yh. American Coast out to 409 n. rel	America	D Count o	ut to 400 n	3					-		4	que en entre en en	1	*			
Vertical layer	į	Starface	Starface to 5640 as depth	depth						:	Surtain		+			Topos	bacy ro	Top of beay roast to surface		:	:
Jange (5-yr BOA)	1 804)	0 % 0 %	0.06 to	0 to 420/00	4500 to 5800 tos	5 to	to -5 to 0 to 10*	0 to 2.0 - 10.1 to 19/10 - 20 db	-30 to	0.00	0 to 1 to 0 to to 0 to 100 100 100 100 100 100 100 100 100 10	0 to 1 to 0 to 10 to 0 to 10 to 10 to	0 to	\$		1059 mb	25 to	S 10 5	1055 mb 40°C 2.0 by m (n./ hr 360°C	-	0 to 340 kta
Max error	_	• • •	0.03 kits	0.03 kts	ed.	0.01°C	£1 0	1	3 6	7.	0.2 (t 0.1 mec	0 1 sec		<u>ن</u> -		6.2 ft 0.1 see 5. 0.1 °C 01 hr 0.1 mb 0.2 °C 15	2. C	**	0 61 F 7.		0.5 kts
Derretton of ob.	8	Inst. or	Short per	Inst. or Short period Aug. (Represse	epresentino	5					1	- 	 	-		~	7 :	-	1	-	
	X.Y	≥ 300 g	≤ 500 B. my/100-150 B. md	- LS 0 B. md			4					!	†		:		:		1	:	:
Internetity	2	20 Sec	LA PBO lee	20 3td. LAFBO levels (+ nat.r bottom	bottom)			2 bevelo			Barface									!	
	C	6 km/s bre	bre .							-			 		!			1			
Ob. symeth. X.Y. (73 10 min, (1 sets.)	X.Y. (2)	10 mta	, (1 media)									!									

Osographie location	contion	Deep C	Deers - W.	Deep Opera-W. Const to 160.E.		to Berria	E Sea/Con	- No. 3-155	10. N to Bertrag Sea / Gonetal - 42. N - 60. N and out to 400 a mi from the Count	±009 a m	of from the	Count				
Vertical layer	rer	2000 m		1	- 85	Sfe to			Mo to	340		1		afe to	3	*
Renge		0 to	0 tic 10 icts	23 23 26 26 26			0 to 9000 peri	0 to 2.0 1y/m	0 to 76%/m		0 to 1 to	0 to 360°		9 01 to	9, e	0 to
National orror	rrat.	٥.	0.5 ≤ 5 10% > 5	0.015 0,50	0	0.02°C	ر د : د د : د	19.	7,	0.2 M	0.2 ft 0.1 sec or 16% or 19			==	3.	138 T
Darritten of ob-	8	≤ 10				10		Ŧ	v 10			*		01.5	01 -	
	X.Y	100 /s	/s 10 60 n. m	1	 					++		1	1	uim .	cia	ei ei
Sampling intendity	Z	86. 74.380			pn.⊒-	Sed Al			084¥ 1384	K/X			+	×/×	× × ×	ž
	Time o	24°			!			•	s hre			+ • • • • • • • • • • • • • • • • • • •		6 hra	and a	Shra
Ob. evaca	X, Y	abor 01			-	10 mlm			10 mln			Ā	+	10 min	10 min	- A
	2	1 min		Ŧ		ala ala		ţ	1 olu	V/N				4/2	V/5	-

Requirements fully met:

Regularments partially not and why: All the requirements listed in 2 above would be met with the exception of

The fine scale X, Y spacing: Textstive "system" spacing is 600 DO and 100—150 or mi CNA. There is a special requirement for 5 n. mi spacing on 175*W xouth of Adak Island—most constal sections require occusional sampling at 5 n. mi and regular sampling at a maximum specing of 50 n. mi.

Requirements and nost and why

They feet that the proposed "system" will be too coarse to have any real input to their program.

Page 1

LEPINED AMO # 12 REQUIREMENTS (Continued)

YREY AREA	" PARAN	STREY AREA" PARAMETERS NOW IN QUESTION FOR THE TENTATIVELY PROPOSED DATA BUG SYSTEM	UE: TION FOR	THE TENTA	EVELY PROPO	SED DATA BUT	N SYSTEM		1		\$	Hevised 20 Aug 55
Purumeter												
A D location	R				t de seu source source source solle es						+	
Vertical layer	187											
Range												
Maximum error	rror											
Derende of A	+6											
	×											
Sampling intensity	7										247	
	Time											
4	X.Y							-				
	23					-	***************************************		}			

PARAMETERS CONSIDERED BEYOND THE 5-YR STATE OF THE ART FOR THE TENTATIVELY PROPERTD DATA BUOY SYSTEM

Parameter		Planaton	Bi care : lents	 					·	
						7	7	7	*	: : : : : : : : : : : : : : : : : : : :
					***************************************		 A		A	
Vertical layer	10.	SEC to 5000 m	Sife to 5000 m Sife to 5000 m							- 1
3		å	Unk							
Mearineess error	201.6	1	n#							
Duration of ob.	8	Unit	#in							
	×	60 to 100/5 tr :0 n. md	.0 B. md							
Sempling	2	Sed IAPSO h le	Std (A PBO ivis							
	1tre	6 km / 3 km	6 hrs 3 hrs							
	×	10 mts	io más							 +
CAS CAS	2	1 vain	a tar							

·

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

1 TENTATIVELY PROPOSED NUMS SENSING CAPABILITIES

* /	Para moterre					0	OCEANOGRAPHIC	1PHIC						-	t ;				İ	Sept 20	Newfood 20 Aug '65
/		Curr	Ont		See and	1	i i						-	100			LEUMO	ME LEONOLUARCAL			
	/	-2	fiz. speed	Salizatty	1		thems described America Trans-	A DEDICAL	A marmons	I rens-	Wave	Wave oxeasurements.		114	SWOM.	Atmos. Atmos. Dev Inso-	3	Inso-	Precio Wind	N P	4
construction and						}		E.	900	parency	ž	Per	Š	70 20 20 20 20 20 20 20 20 20 20 20 20 20	Sect. p	press point latton	poline	lation	1	E L	hood
Geographic Insettes	(Tenadition	0	(+09) THE	Deup Conns (60"N to 60"S/N. American Const out to 400 n. ml	. America	is Const on	t to 400 n	ļ	er innerhannen er en er en en en			,	maren d'an	Carried Sections	-		-				
Vertical layer	į	Berriace	Perface to 5000 in depth	depth					-		9.46			!							
1909	140		1			-							• ••			e e	1500	TOD of buoy mast to surface	63		
	(W)	3 ÷	10 kgs 42 0/	420/30	\$500 to	5. 5. 5. 0.	-5 to 0 to 10*	0 to 2 0 -86 to		0 to	0 50	1 to 0 to 55 vs	0 to	·		10 to	25 to	800 to -25 to 0.01 to	0-13	0 0	o to
Mar error			3	10.00					1				000	•••	- -	Ĉ.	- U-04	E, 40 0	1099 mil 40°C 1 2.0 by m 10./ hr 340°	.03	160 kts
(5-yr 2CA)			or 18	or 1%	8	9.01 °C 9.13	51.0		6	<u>ت</u>	0.2 % 0.1 300	0.2 fb. 0.1 and 5.	L. U	10. 3-2-3-1	2	01 hv 0.1 mb 0.2 % 19	0.2.0	14	0.01	:.	c S kts
Darration of ab.	8	T.	Short per	last, or Short period avg. (Represents		(all)					500	4	-		_	-	1		in./ br		or 38
	X,Y	A 666 B	S 600 B. ma/100 150 b. ma	150 a. me											-						
interestity	2	20 Sed. 1	A PBO low	26 Sed. LAPBO levels (+ near bottom)	berttom)			2 lawois							-						
	F	o kraf 5 kra	5								CULTACE		***	-							
Ch. synch. X.Y. (2) 10 min. (1 min.)	X.Y. (2)	10 20	1										*12.								
		i	Ì										• 3						-		

2. REFUGED AND # 13 REQUEENERS NOT SALES

The state of the s								u Danie									
Geographic less	8	Pacific	3 N. of 20	Pacific N. of 20°S, W. Const to -		Deep	180*. Deep Ocean and Constal	Coustal		-							i
Vertical layer	Ė	og co	Sec to	Sec to		3	1										
	į	82 00 G	900	80		3 5	3 5 6	380	offe to	_		-	,	Mc to	-	Sec. of Sec.	1
1		3	0.88 12	o to		3	100		500 m	5		310	<u> </u>	ump			3 1
		.098	10 kts	42 °		; Ç		0.2 of 0	0 to	-	-15 to	0) 006	1 -	0.01 to	0.0	3	0,0
Maximum error	Tra		0.04 btt					+			200	1060 mb 40.C		2.0 ly/m	360		120 kts
			or 2%	9. 500		0.02 °C 0.1%	0.1%	1%	\$5		0.50	0.9 ml.			-		6.5
Darrad/a of ob.	8	\$ \$	6 hr					+		+					• •		2
		NA.		10 3013		10 min	10 mta	No main	10 mln	<u>-</u>	- upp	1 mdn	i mun		Ē	3,2	
	××	1001		in Head				+		5	or inset	or inst or inst		10 min	EV.	;	67.1
,		\ =	7-100 B	60-100 B. mt . 600 B. mi ang	Tri sue in			1		1 1					-	1	
Name of the last	23	25 Feb						-			1		-	-	1	-	-
THE PERIOD		Desible		30 FIE		25 le 35	8[4	X/X	10 1016	2	4 2	1	1	-		-	
	ě	COSES	Const	4 4								, , , , , , , , , , , , , , , , , , ,	٧/٧		Y/V		Y / X
						E .	S Drs	ř.	E- 22 E-	**	8/3 bro	6/3 bra	6/3 bra 8/4brs 3 brs		,	-	
6	»,	10 mag					:			+	+		2	B 211 C		5/3 hrs	3 hya
· · · · · · · · · · · · · · · · · · ·	2	1			1	7	10 1010	0	apar 177	_		10 -6-			_	-	
	•	1 200				l min	i mela	¥/¥	1 10 10	N.	100	=	nin C	10 min	10 1	intin 1	E TE
3 RESULTS OF ASSESSMENT	P ASSESS	THE DAY							The Maria	, L	-	٧\ <u>٧</u>	V/2	- ××	\ X	V/N V/N	4
														-			:

Requirements fully met:

lequirements partially met and why: All requirements listed in 2 at a would be met with the exception of

• The finer X, Y specing (all DO and part of CNA): Tentative "ystom" specing is 600/100—150 a. m...

• The finer specing of 25 lavels to 900 m: Tentative "system" has 20 IAPEO lavels plus bottom.

• The 6-br average for current velocity duration of ob: Tentative "system" value is up to 10 mis.

Begintenances not ment and why:

Total Cloud Amount: Judged better done by other means.

Ourges, Tidal Plactastica, Total Radiation in of not insolution) Out, and Turbidity (if not transparency): Uncertainty about ob. from busy unattended for long periods.

Phytoplaniton: Considered beyond the 5-yr busy SOA.

REQUIREMENTS (Continued) REFINED AMO # 13

Parameter		()xygen	Tidai fluct	Turbidity	Total rad n	Total rad o Total rad, out	Total cloud		
Geo location	ş	Pavific N of	Parific N of 20 S. E of 140°					The second secon	
ritical laver	787	Sfc to 996 m	Bottom	Sfc to 600 m	SKr.	Sf.	Stc	A CONTRACTOR OF THE PROPERTY O	
Kange		0 to 19 m(4	0 to 50 m	0.00	Gm-Cal CM ² m.to-1	I CM2	6 to		
Mardin G. error	1,70;	i ml/l	01 m	27.		0.2 %	1/10		
Duration of ob-	18	10 min	24 hr avg.	10 ach	10 min	10 min	10 min		
	X. Y	606 c mi	Selected areas	Selected	600 5. mi				
Sampitag intendity	2	10 tevels	bortoin	10 levels	A/A	K/2	N/A		
	, Tim	6 brs	1 hr	6.3 hre	6/3 hrs	8/3 hrs	6 3 hrs		
(# symch	χ	10 mtn	10 mir	10 min	32 min	o min	10 m (:)		
	2	1 min	N/A	l min		K/E	W/W		

:		<u>\$</u>					-			
raremeter.		p/ankton			-					
Geo location	8	Pacific N of	Pacific N of 30'8, E of 180"					£,	-	
Vertical laver	J-a-L	Afc to 300 m								
Renge	İ	ra k								
Mantinum error	errom	nak Lark			- ALLEGO AND AND AND AND AND AND AND AND AND AND					
Luration of ob.	- B	Cont.		 		***************************************				
	×	600 n. H								
Sempile; intensit:	13	10 'n ele				-				
	Time	Cont			-		ļ -			
distance (M)	×	12 hr					+			
	2	12 hr								

Remarks

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

\\ \text{\rightarrow}	Para motors						OCEANOGRAPHIC	IPPIC					-					P. P.	1m6d 20	Ravined 20 Ang '68
<u>/</u>		Curr Curr	2		Sound	Nation.	Water W. crasse Architect A. Line	A robins					+			ME 1 2()	ME I SUMULLIARINE			
ć	- /:	-	page	Minity	1	ļ		and the second	A dream		WEVE HE	wave needsurements.	A17	Atimos	Atmos.		Dew Inso-	Precto	- A	E P
CHEMONTHOCS	8						under.)	200	parency	÷	Per Dir	Ar Kemp	p elect	bress.	port	lation	2	17	Paodu
Geographic location	location	O and	2.09/ Taba	1 to 60-8	America	2000	Deep Open (60°N to 60°8)/N American Court on the son					-	+	-	_					
1				7																
A COURT TRANS	Ž.	r t	Surface to Seed in depth	e par							Burface		;		F	7				-
Reage (Seer SOA)	SOA)	3	0.00	3	45,000 to 1 2 5 20	4. 4.			Г	1	, -		-			or mucy i	top of buoy mant to surface	₽ Я		
		9	1	45 o/ o	58 06 the 40 °C	0.0¢		9 to 2 0 -180 to		0 to	0 to 1 to	61	tn 25,	0 to -25 to 0 to		o1 52 -	800 to -25 to 0.01 to	0-12	93 0	0 to
Max error			100	0 10 0				7			3	1.00	9	10 80	_). 0	1099 mb +0.C 2 /1 3 m	in./ br	360	160 K*s
Syr SCA	_		£: 5	or 19		3.100	-	-	€	**	2 ft 0 1 sec	2 ft 0 1 sec 5.	J. 1.0	C 01 kv	200	0.1 mag 0.2 mg 1.0	122		1	n.5 kts
Duration of 96	8	1	Scort per	last. or Scort period ave. (Representative)	D. Dramenta	ê		-	·	T			+	T	_	_		in hr		or 3%
	×	:	5 600 my 100-150 p. ma	150 p. ma				:	1		1		+					1		
Internativ	2	20 Sed	N 100 ICE	20 Sed (A HBC) levels (near horovin)	XXXVIII)			2 levels	-		4		-							
	Ē	S brack hru	,		1				1	T	1	-	-							
Ob synch X.Y. (2) 10 min, (1 min)	X.Y. 2	10 ਲਈ,	(eff. (-)		į	: 			1				+		1					

*Include	Includes Measurements x Swells	# STREET	See Ile							
REPTHED A	MO • 15	i Rikou	(REMENT	S BUF WOOD	de Boke-Renearc	h on Major Ground First	RETINED AND # 15 REQUIREMENTS BOY Woods 30te-Research on Major Ground Figh Species off New England Compa			
Geographic	acquire, A	New E	pgtane	New England partners shelf a	-N - 60 W to 45 - N-	60*N to 45 *N - 64 *N to 74 *W no leave University	United to the Control of the Control			
Vertical layer	146	Stc 30	<u> </u>	.	260	1	Target of Out, Street in			
	1	200. m		1	2001 m		So #			1
2		23	3	3	01.5	91 916		3.6		٠. ا
		K	ž	. S	J.01		E 201.	10	3	3
Maximem er ror	15 TG	•	0.03 813	2 6	-			36	360•	150 krs
			41 TO	3	ر ه	*	1/2		.0%	0.0 156
Durance of ob	- 18	\$ 5	-	 						.E 10
		g		•		0 .	10		10	
	×	30.00		+	and .	GIB	min		_	
		3 8		1	03 65		30 tc			
Sempling.		4			100 n m	300 n mi	106 p. mi		100 to 300	966
In ending	2	1		7			CSdVI		im c	
	7	7	-	+	1	V/8	N/A		4	 ;
	<u> </u>	a hra	1		3 hrs	E	214			
	X.Y	15 mile			- 01			3 h	3 hrs 3 hrs	a hrs
~	2			-		E SI	10 mir			Y-
		77.77		F	atar I	Ž.	The state of the s	(1)	THE PERSON NAMED IN	E
PESULTS OF ASSESSMENT	開催が大	BACKI						X	X/X	4.7

IV 67

Requirements half mest. All requirements listed in 2 above where K. Y spacing is 100 n. n or greator

Requirements partially met and why All listed requirements in 2 above would be met with the exception of a spacing in Mareden equality 116, 150 and 151, if when resolved is like than 100 n mill. Tentative "aystom" has spacing of 100 to 150 n mill these areas.

P. .

REFERENCE AMO # 15 REQUIREMENTS Continued)

Personeter		Cary great								
Geo iocation	8	New England Continental	Continental Shelf	, E		 	1			
Vortical myer	yer	Sfc to 2000 m			-					
Heade		3 E 3				-				
Martmum error		0.1 ml/2								
Duration of ot	18	las:								
	×. ¥	30 to 100 p. mt								
Semanting tablesetty	2	Std LA PSO IVIS								
	, and	8 hrs								
4	×	10 enta						+		
			į							

PARAMET	ERS CONS	EDERED BEYON	D TISE S- YR STA'	PARAMETERS CONTIDERED BEYOND THE S- YR STATE OF THE ART FOR THE TENTATIVELY PROPOSED DATA BUOT SYSTEM
Parameter		Chlorophy!	Phoephatae	
Geo location	8	New England	New England Contraental Shelf	
Vertical layer	W#T	Offe to 2000 m		
Runge		0 10 2	0 to 6.5	
Maxim an error	HEOR	9.1	0.1	
		mr.o/m	шпэ/слш	
Duration of ob	ę	Inst	i i	
	×	30 to 100	00 a m	
Sampling	83	Sted LA 250 Jev 6la	Std IAPBO Jeveid	
	T.	3 h7	348	
. L. swach	x .	10 min	10 Min	
		É		

-
نعا
æ,
z.
27
(e)
Z.
Τ.
-
<
□
_
12.
2,
2
Ξ.
Y.
Ξ.
_
FOR RESINED DATA REQUIRED
-
-1
-
-
2
DOLOGMEN
_
Z.
e)
•
ñ
ð
0
0
₹ .

E TENTATIVELY PROFOMED NOW SENSING CAPABILITIES

Paragery	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						100				-								Ž.	fored 20	Seviesd 20 Aug '68
/	-i-			-] د	CEANGLEANIC	JH J	į				-			X	TEOROL	METEOROLOGICAL			
/		Curr. Curr.	Curr	Sellaity	Sound	Webs	Water W press Ameient Ambient Trans	Ambuent	# rabient	Trans	Wave m	Wave measurements		Air Atmos Atm :=	imoe A		Dew	Inan-	Dracin	5	7
Cer 10 and 10 an	7							Ē.	18 50 U	parency	Ħ	Per l	å	, in state	100	ź		lation	3	£	poods
Geographic location		O care	(.00)	1 to 80.8	ST- BET-	C 20 20 20 20 20 20 20 20 20 20 20 20 20	Deep Ores, (66"V to 60"8VH merical Court put to 400")						†		1	1	1				
Vertice: layer	-	2	St. ser to 5000 m depth	900				 													
Annual (Service)	†		1			- !					DELLEC.		_			Topo	buoy mai	Top of bury mast to surface	F.C.		
	-	· · · · · · · · · · · · · · · · · · ·	.	3 3	3 A 3 8 2 8	-5 to	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 to 2 0 -80 to		6 to	0 to	_	0 to		-	800 to	25 %	25 to 0.01 to	0-12	0 23	6 35
Max error	1	ľ	0.0		1	3.00		T	1		3 -	_	2		\$	₽ 66	O.01	2.0 ly/m	1099 mb 40°C 2.0 ly/m in./ hr 360°	380,	160 kts
15 9 1 SKIM	-	_ :	or 19	3		100	•		6	×.		2 18 1 0.1 sec		- J C	11 av 0.1 mb		9.2 °C 19	6	0.01	:	0 5 kts
Parts of 85	; , .3 ;	I	Poor per	last " Nort period avg. (Represent		Ē]	7		T	5	-	-			1	_	ta. hr		or 3%
	۷. د د	1 000 s	18	5 800 B 100-130 B 124									-		:						
A STATE OF THE STA	· 2	7	PRO IS	2- Std IA PBO Jevels (* 1882 DORDOW)	bottom;			2 levels			9		-					i			
	1	S arrest lare	5				1						+	-						į	
(D oye,) X.Y. (D 10 min, 13 min)	6	- TE 0	9										+					!			
discussion Measure of the Control	Mary .	6	all a				1					Ì	-		į						

2 REPLYED AND 0 16 RECYTHERENTS INTE

IV -69

Next	Congressive location		Outh of Maline : Offs pre;	ATS The					-					
Str. Str.	Very all aver	98° to	-		36. 10	1				E	Ξ.			
0 to 5 to -25 to -25 to 0 to -25 to 0 to -15 to 0 to -25 to 0 to -15 to 0 to		b. Arcon			3	90 10	of to	34c	36	000	_	-		
S K S S S S S S S S	2	9	<u>.</u>	5 50	E COMODO	Dogon	Doctor			360				
10 10 10 10 10 10 10 10	•	%		35 ° 35	3 Ç. 7 X	0.10 2.0 by/H	5.03/11	0 to	-25 to	900 to	10 to 0 01 to	0,00	0 to	o to
Or 15	Meximum error	.5	93 140	0 01 9,			+		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	TOPO IND	/*C 2.9 iy/r	n 12 in./hr	360•	90 kts
1 1 1 1 1 1 1 1 1 1		•	or 14	ફે	0.01°C	1.6	\$	10.0	0.1 °C	0.1 mb		0.01		0.5 kts
10 mm or 10 mm 1	Duradon C. Ib.	1			,				-			in. Ar		or 35
10 min 10 min 10 min 1 min 1 min 1 min 1 min 10 mi	1-1-1-1				a a	मु	Tag!	Inet	Inst	ţa c				
10 min 1 m	×	_	0 B 04		7 2	-							 	
10 min 1		at see	t 3 baoys	•	3 5	2 1	23	23 23	25 to		1	25 to	†-	
	İ.,	×	HOL.	Total Communication		The state of the s	30 2 00	30 p. m.	30 a.		_	3 8	+	1
N/A		λ. ΔΙ	!		Ş. 2.	200 ×	70.			Ti "		30 II III		
	-		1		al I	Tale .	NIA.	V/V		- V/N	-		+	Ī
10 min 1		ā	1	1	, j	eo ∀1	en ∀1	6	5.5	- v'	+		+	
10 main 10 main 0 ma. 1 main 10 main 0 ma. 1 main 1 main N/A N/A N/A							bra	pro	brs	hra		+	-	
1 min 1 min N/A N/A N/A	· 1 (2.4 g)				-	10 min		1.0 min			+	+	1	
N/A	-	apar			a par	- mt	1	+		min 01				•
	PESTULITS OF AME	THE SECOND					u.m. ,	4/2	K/X	N/A	+		-	

Requirements fully mer. Ambient Light and Lanolaston

Requirements numbering met and why ... If other requirements listed above in 2 would be met with the ecomption of ... Plac X. Y space 36 (25 - 1) Ed. Tec. (19 "system" specing is about 100 n.m.

*If thinks burgs were used is an abbarrantive, one off NE Coust of Malbe but not in the Bay of Pinday, one just NE of Cape Coc, and one in between then these requirements probably would be met.

P.C. Weth set not said vey
 * Th-L Cloud Annual and Tidal Fluctuation - Judged better done by other mean * Okygen - Uncertainty and the from busy mattended for long periods
 * Cloud Type - Considered beyon: \$\$\tilde{\sigma} \cdot \frac{1}{2} \tilde{\sigma} \tilde{\sig

Page 1

REPRESE AMO: # 16 REQUERENTS CONTINED

										Herrised 70 A. J. Sa
13.400		5	proposition .		Rea	ant				1 m m m m m m m m m m m m m m m m m m m
		,	TCR'44.	ť	puta puta	200				
ine locat:	ç	(ALE - MAIN	(ALE Maine rationale				7	-	-	
Vertical inver		3 c 22	- F							
The second secon		THE PARTY AND THE	+	-			_			
Paris Paris		7 to 14 pros	Ä	to 30 th	,096, oa o	1 to 87 kts		•		
Maximum error	404		· • · ·							
				E		os ktaor 34				
4	•							-		
		186	1	***************************************		1				
	,	14. 30 a a	1							
	- *	The Schauf of Processes	H day or							
Managarine	7	5,6								
in tenne it.		14 PSC) [18]	<				_			
	É									
-				-		*				
4	×	aju.						_		
	N	27.0	4 2			A				
	-		100							

starting "Resultant vino, that he computed for wind observations

IV - 70

Parameter Cloud type	Joint type	entrepe, .	•				 			! 	
(ims correction	Call of Malas. Of	Office	7	Ť							
Vertical layer	ř		 	!		 !					-
Kenga	- 1		+						!	. :	+
Marimon error	Y .	÷			,	 	:	1			_ +
No with the last of the	Inat								-		
×	iš. T			 : : :					i	:	•
Proling.	- The state of the	******		+						:	
6:	Le			-			-				+
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	WELL OF		* *	*					!		

	Fare meters						٥	NO KAPHIC	PHIC				1	-		1	Z	ETEORG	METEOROLOGACAL			
		. .	, rr , urr		* -		خ . ، يو		Was - W press Amknent Ambient Trans	Ambient	T.	1 3.	e messurements.		Air	Air Atmos Atmos	Atmos	***	[ns-:	Precip Wind	₩.	Þa i
Characteristic		5	•		,		923	depth	- Alepthy - Agrit		r same heres	¥	Per	Ě	<u> </u>	elect press		print to kind	lation	ž	ŧ	page
A Charles	CHANGE WAS CONTROL OF THE PROPERTY OF THE PROPERTY OF	1		ર કું કુલ્લા કુ		- 1	Commit comp. 104	101	2						1	1						
and the	224.	File	Marface to 5000 m depth	- 60d #6								Brier		•			Top of	buoy m	Top of buoy mest to surface	ac.		
10 12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	X &	30 %	5 tc 5 th to 120	10 23 and 01 and	+		9 J	• S a.	٠ • •	*	, to 708/B		9 to 1 to 9 to 25 to 9 to 10 t	9 to 1.25 to 350 to	. 25 to 8	-	01 00 to	25 to	400 to 25 to 0 0 to 10 10 10 10 25 to 0 0 to	0-12 in, br	3 6	: to
SAT STA			23.00		<u>\$</u>	•	0.611-0-13			• • • • • • • • • • • • • • • • • • •	ž.	2 2 2	0.2 % (1) mec 5.0 or 16% or 13		0 1.0 01 15.4		1	0.2-6	· <u>·</u>	19.6	- 2	0.5 kts
Darrages of ob-	8	, ,	F Mort p	hast or Moort perfed avg (Mestersements tree)	Represent		4	•			-	-		+-					T :			;
	×	8	8	- 1001 -001/m - 1000		:	:								i	i i			:	:	1	i i
internation	. ~	2	20 Med LA PEG Jevela (* m.	20 Med LA PECC Jevrels (* mear *)		· · · · ·			2 bevolu	:		Burtace				THE PERSON NAMED IN COLUMN TO PERSON OF THE						!
	\$		-		•	:		:				+	:			1	1	1			i	
1	A ×		1				:	:	:					† - -	1	1	1		•			

3 REPURED AMO 4 17 MEQUINEMENTS BOOF, Booth

Opogramatic leanthen		7	Malne .	Construct Manney of constitute; Withham	kin 10 a se	7												
V relical lapter		3. ¥			• !	Me to	Wr. 10	-	3 36		-	- 3	- 3	-	-			
	1	Contour	1	•	<u>₽</u> ;	Part off	botton	ន	pottorn	1			316	:				†
Refer		a o	j e	3,	*	a n	0 7 23 0		5. 5.	3		25 to	300 to	15 to	13	900 to 15 to 0 1tc 0 to 12	<u>=</u>	3
		X	\$ 11.0	2 2 9		73.C	ty / as		504 /B	80 #		J.03	1066 1	O66 mb 30 €C	20 ly/m in hr	in hr		\ \frac{1}{2}
Makimon error	<u> </u>		0.3 kts	(((((((((((((((((((0.100	<u>*</u>		*	0.2 10%	- 4		1 d	0 1 mg/b 10.2 °C	=======================================	10 S E	; ;.	44 5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
号 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日 日	*	į		1		last	. <u> </u>	: :	lant	<u> </u>	<u>+</u>	- Tal	to etcl	: . • .			· · ·	•
	` ¥	23		•	-	\$ 13 \$	3		* to 13	- S 50	+ + + + + + + + + + + + + + + + + + + +	2 cs	3					
,		Ë		Γ,	-		e c		E			Ē	E					†
45	2	Contract 150 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	*		1		F	-	ج ج		<u>₹</u>	. * . %		· ;	· · · · · · · · · · · · · · · · · · ·	: ·	†
	Ē	Log		•	*	3 bre	1	• •		3 hrs	<u>.</u>	3 hrs	1 hrs	: : +			1.1	†
it synch	× ×	. m(1		•		10 mila	16 mda	÷ =	10 main	16 min	-	10 mtn	+ 16 min	; ; ; ;	* *			†
1	7	er par		•		. rain	Ë	· •	i m	7	-	7	7	; }	+ +		11	*

Requirements (4) y men

Response seems partially most and why

Supplications and most and why All requirements listed - Tentable "wastend" done not actually the near shore or extuaring area. Further investigation of requirements in these areas is needed

1.5%

MENTALED AND A 17 CONTROL OF MENTALE CONTROL OF CONTROL

			A	P.	terin, tank mine	1001	1	-						
19,419,114		E . E	A Charles	The tastine	Bree 'sa.	a pertect								
	s.	CALLE AF MERICAN AMARTICAN		•		•		-		-		··•		
Vertival layer		Mr. C. SARDOR	ý			7	<u>.</u> _		.			,	L	
Person	•	2 to 12 to 2	2 2 2 2			4	· • ·	→	-			•	•	
Mandath sen e F FVM		12.				. ata	•	<u>:</u>	-				:	
Paration of the	•	1				1		-	· · · · · · · · · · · · · · · · · · ·					
	, p.	. 10 13 e B		•				:	-					
	N	Chamer mear									:	1	:	
	1100.0					***	<u>+</u>	<u>;</u>				·		-
A STATE OF THE STA	≻ 	# E 6	***					+++++++++++++++++++++++++++++++++++++++	++			· · · · · · · · · · · · · · · · · · ·	. 44	

Remarks - Food statut of the United Statishad and whald by prosent of additional land beard stations. Remarks Research at the compact of the restore the compact of the restore.

the second course toward to be the management of the second contract to the second contract		The same of the second commence of				The second secon						
727	attes tract.										-	
100 (\$10 m) : 100 m)	TALL OF MESSAGE COME CLOSE	The state of payers	4	-4			- -i		- 4		_	
. artical gran	ž.	2	سو	,				}-	-			•
*		•	• -				<u>.</u>	-	•			
Machine and mercon	*							· 	* * *** * * * *			
They attitude of the		•	· ·						*	:		
· *		•••	÷		•		•	· • · · · ·		_ .		. •
Turpours.	* · · · · · · · · · · · · · · · · · · ·	•	•	→ 117			: :			:	· 	•
***		• •		•	•						-4-	
		· p · · · · ·			* *-		* •					
Married Annual Comments			+	1		M					7	

i.

A WERWAY CONTROL FOR PERIOR TO TA HEQUIREMENTS

The state of the s	,				18 18 18 18 18 18 18 18 18 18 18 18 18 1	4.644					,		3					
THE RESIDENCE CONTRACTOR OF THE PARTY OF THE	***	. Alteret		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		7 1 4 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Transfer.	**************************************	H H	Maker A creat transmit that the parent transmit and the creat transmit the creat transmit the creat transmit the creat transmit that the creat transmit the creat transmit transmit that the creat transmit transm	÷ 5	₹ 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Act Atmos Mins less less lass. Metal class contain debots	1	T Section	Ē	3 =	Wind Wind
	****	The first continue of the second problem of the second control of	PS COMME	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	401.5.4	***************************************			Ţ				-		4			
E LANGE TO A PARTY OF	Martine or complete martiness	ellestrate as same							,									
\$ 3 1 1 1 months	章 よ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・ ・	Section 1988 1988 1988 1988 1988 1988 1988 198		÷ 5	پ د د د :		,			1.		3		# 10 10 10 10 10 10 10 10 10 10 10 10 10	Lay of burn mark to surface	et a later l	ند در در	2 0
******		A PER COLUMN COL	• 3	. :			i *	, T		Services and the services are services and the services and the services and the services are services and the services and the services are services and the services are services and the services are services and the services are services and the services are services and the services are services and the services are services and the services are services and the services are services and the services are services and the services are services and the service	-	· - · · · 2	Mary Date of the Mary State of	.).0 . 7	4 4	₩ ₩	·	180 xts
The restriction of the leaf of	Indiana in Marie	The mean of large. The property of policy and permit	ayar mass talked	24.5												ž 5) 9
	THE CALL	THE R. P. LEWIS CO., LANSING																
The market of	1 1 2	TO THE TAIL OF THE PART OF THE PART OF	7. A. A. A.			9 (4)												
į.	***								k /4 17x									
の ままれ 一次 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1																		7

Bengritgeber Serretting	and the statement of the section of	Charter of cape Nathern		*		:	1	The second secon	:				
	Posttore Costners	The state of the s	. .	.		J	· •	.		F		h : :	
.	•	- ;	.	·• ·			+	· -	•	- · •		7 .	ý i
Managed and the Managed and th		•		÷				-		•	•••		44.
Serence A &		•	*			••		,			+		÷ .
* J	A CONTRACTOR	E STATE OF THE STA		•	•		-		•	•		utili)	
4 mm 1 1 mm mogs.		()	•		•	.			·- *	•			ž
) 	***************************************	*	•			• -		•		•			
			• •			- -				•	÷ •4		
THE PART OF STREET	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	***************************************	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	•	A								-

abord in a popular en aborde de la propertion de la prope

Supplier thanks and man and why

ASSESSMENT SHEET FOR REPURED BATA REQUIREMENTS

1. TENTATIVELY PROPOSED HOSS SENSING CAPABILITIES

# d	Part indters				-		A LANCKIRAPHIC	1.	The second secon) 			: 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			1
Characteristics		Curr Curr	Curr	* thatty	Skarnd		W prex-	T Ambrecht Highs	Ambient Grabient Trais	Laures pacenter	* * *	Per In	5. ž	Action of the second straight the second sec		• • • • • • • • • • • • • • • • • • •				
morphological		ਂ ਹੈ ਹੈ	181 cm	Doop Comp 180"N 16 60-8	A America	an Cowst	American Coast out to 400 c m;	m:				-	- -	-		The state of the s			1	÷
Vertical layer		Burtaix	to 5000 m	o depot							Starfer.				Ĩ	John Linear Control				
Pange (5-yr SOA.	+	386	360* 10 kg 42 0/9	360* 10 kgs 42 0/36	6500 to 1. to 5800 tour 10*0	to.01	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	6500 to 1 to 10 to 104 or 10 or 10 do 100 or 10 do 100 or 10 do 10			: 3 %	3		: : : ا	F 100 100 100 100 100 100 100 100 100 10	400 kg				
Max error			9 03 kts	5* 9 03 kts U 01 6/ (kt)	. •	, (1.0) sdy	*		Ě	Ž.	10.2 ft. 11.5					70.7		1 : F	. - *	,
Duration of ob	 	poet or	Sort per	hast on Short period avg. (Regirenental ve.)	Legirenembal			-•				-								
	· >	4 60¢ B	-001/ma	- 60¢ n au 100- 150 r m'	:								- 1,000							
latensity		29 Std.	A 150 .e.	29 Std. LA 15C , evels (* near bottom)	hottom)	:	i	* · · · · · · · · · · · · · · · · · · ·			4.1		-							
	ng.	6 brack bre	ars.					-												
(h) grach X 1 (2 16 min, 1 min	20 (2)	16 min,	ate .	:																

** The state of the state of Swells ** Sandy Floor Marine Laborators First Sandy Floor Marine Laborators First Sandy State State Sandy Sandy Floor Marine Laborators First Sandy Sandy Floor Marine Laborators First Sandy San

Nertical layer Sec	Geographic location	location	6	ast Coast	-Cape C	ad to Flori	d. Feys a	Ut to a fami	15 of 15	thoms	The second secon						:		
10 10 10 10 10 10 10 10	Vertical in	yer	Sfc Yeff	. 3fc ·	Sfe to		Ste to				F	}-		 }	k		b		,
Ox Ox Ox Ox Ox Ox Ox Ox	Range		3 °C 38:0		38 0 0 0 0 0 0 0	-	1 to	1								mak		٠.	
X, Y Transacri Lines 10 10 10	Maximum	Pr. 104	16.	1 -	0	-	*	!	*	:						•	•	•	
X.Y Transect tines = 100; ml spert 100;	Deritor of	8	9 v			· · · · · · · · · · · · · · · · · · ·	2		*				*	· • • • • • • • • • • • • • • • • • • •			•	٠	
Z N.A V.A N.PSO 5 0 0 10 10 10 10 10 10 10 10 10 10 10 10				1 inas	: 93:	r	g;w		4				•			•	•	1-	£.
71 ms 3 brs [Val.] X, Y 10 man.	Se mpluag	Z	Sulpacing.	The Contract of		16, 26 30,	50, 50 5 m to	た	100 con 400	1					* * ·	:		•	
X, Y 10 main	,	2	1		1	+	्रिक्टिक रिक्रो स्टब्स	बाज एड्र					•	-	*	•	•	-	
and	4	٨, ٧	10 mate.			· · ·	le min	:		•		4	.			•	:	•	
	!		appe :				1 1 1			•		 .	+-			٠	4	*	1

RESULTS OF ASSESSMENT

Requirements fully met.

Requirements partially met and why All requirements listed in 2 above with the exceptions of The fine spacing of 3 is a majortransed. Tentative "system" upscring in the first 30 m for wate in perstance at least between Cape. Cod and Materials. Tentative "system" spacing more grows.

May accounts and said said with - All usar store requirements within this implement. Fortative System? Fortatives start about 25 in mind the result.

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

1	Parameters						OCEAWOGRAPHIC	APRIC								LJE	MFTFOROCOMICA	7 7 7			
/		Curr	Cerr	10	Sound	8	ater W press Ambient Ambient Trans.	Ambient	Ambient	Trans	Wave m	Wave measurements.	. 3	417 41	I tem.	a se	ATT African Strong liber lines		the property of march	, vc.1-44	۾ م
Characteristics	/sg	dir speed	Cheect	, and a	peracts	du	(depth) tight	Light	्य अक्र	nowse partency	#	Per DAT		te mus	elent Dreid		point land		The state of		į.
Geographic Izcation	i	C area O	H-08) 180-H	Lieng Oches (60°H to 60°Sy'N. Amen as	Amen A		onest out to 400 n m	8							,						
Vertical layer	ı e	durftee	thurshoe to 5000 m depth	depte							Burtace					Topo of t	Top of busing mant to surface	io surface			
Range (5-yr 9(.A.)	9(A)	0.00	0 to 0.06 to 0 to	0 to	4500 to	3 0 3 0	\$ to 0 to 104 0°C per	5 tr. 2 G	9 07 03 07	0.50 1.0%/m	0.00 100 ft	1 tc 5 to 5 to	0 0 0 0	2 8 2 4 3 6	, ° °	0. to 1	0 to 1 to 0 to 0 to 10 to 10 to 10 0 0 to 10 0 0 to 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		# # # # # # # # # # # # # # # # # # #	2 1 2 3 2 3	:
Max error (5 gr 80A)		• •	0 05 th	0.01 G/00 tipe	ā	Ç. 0	W	 = -	6	7,	0.2 fg 0.1 ser	02 19 01 wer 5.		, = C.	**	Ē	01 km 1 mt 0.2 mt		, F		
Deration of the	8	3	Total	last. or Mort period avg. (Ny presentat	- processing	-				-	1			:		ri.	-			•	
		9 900 F	S 6000 E my 100-150 g. my	150 x. m					1			:	-								
Set man jag	7	8 8	IA PRO less	20 Bed. IAPRO levels (* user bottom)	bot tom)			2 leveis			Burface		-								
	Ç.	e and here	5										-		:						
Ob. erech. X, f. (2) 10 min, (1 min	X.T. (2	1.C mate.	Î					and of commercial to the comme			!				1	1	:	:			

2 REPINED ANG # 21 REQUIREMENTS BSF. Tiburce Marie lactudes Measurements of Swells

MET LINED AL		1	and a second of the	TO THE TOTAL		* NATIONAL VIEW AND THE TOTAL OF TRANSPORTED PROPERTY - THE CANADA NEW CORN.	THE MESSE	65								
Geographic location	ocation	Contin	ents Shell	Continental Shelf of Western U.S. (P.	2											
Vertical layer	į	Sec to	Sec to Sec to	Me to	- E		9% c to	9	-	-		*	: •	<u>.</u>	 	les -
		bottom	bottom; bottom bottom	bottoin	*Offices		bedton	E								- •
Rener		010	0 50	30 10	3				· •	·			: - 	.		•
•		.08	6 kts	88 ° _{/80}	3		And J		-							
Maximum error	1770		0 1 83	0.1 kts 0.5 o.c.	0.28°C		Ž Car					÷	•	•	ı	•
Duration of oh	8	i i			 1		1		<u>.</u>	<u>.</u>	•	•	•	,	÷	•
		•			 i		1	_								
	×	Var 98 19 16	33 55		1		:	-	-	-	<u>+</u>	•		•	i	•
		45 n m				1 1	i	ş								
Success of	2	5, 10, 30	0	7	1		<u>.</u>		: •		•					,
S tenent		56 - 130 m	8			.,					,					
	ž Ž	1 27		•	,		1 hr								÷	•
4	××	S min		, and the second	ala ala	-	S male		: -	+	+	•	•		;	
	2	1 (0)			를 -		1 mala	0	: 	-	•	•		.	•	
B RESULTS OF ASSESSED NT	A A 3852 M	E X			1				-							-

Require cuenta fulsy met

Requirements partially met and who it require nints has in 2 above would be met with the exception of the The X. Y at acing of 10 to 45 n to Testative "system" has initial quering of 100 to 150 n, mint CNA, the time sampling intensity of 1 hr. Tentative "eyet m" has do every 3 hrs.

Requirements not men and why

*Tones are 1967 data requirements, not refined

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVE ! Y PROPOSED NOSS SEVENG CAPABILITIES

ه ا د	Para meters						OCEASCASEA PHIL	APHIC					-		:				Revised 20 V.	:
i i		0.17	C			1	,								-	FIF BO	OF The PROPERTY AT			
Caracteristics	sog.	ě	N R	whary weed	Sound Speed	AUG.	i and a	Ambient Dani	A Hibient	Ambient Trans	Seve :	Walter A press Ambient Ambient Trans Wave measurements: ormy depth light have peressy in our	7 9	Atron	As Atrons Atmos I have Inc.	* 10		i	± 580 ₹	ે ન
Geographic location Drep (real 1501N to 501Sy'N American (NO.	à	E 150°	D'ep (Ken 160'N to 60'S) N American (cas out to 1.	ABATIC	to Come o	at to 1:	-					_	-				18		1
Vertical layer		5	endan er oppe, or avalua	dept					1				11-major							
Parage 15 v. Sch.	. () ()	3.08	01:0 03:00 03:00 04:0 03:00 03:00	١.,	45.00 E. \$4.90 to	9 U	A 10 10	7.7 03.9			0.1	Topo 1 to 1 to 1 to 2 to 1 to 2 to 1 to 1 t	3 3	4	8 ·	Found ma 15 to [Full of brine mant to surface to to a fine to the first of the first o	: ن	j.	
15 9 F 3CM			9 63 kg	9 (3 kts 0.01 0 mg 1 500	å	14		ā	β. , ∉	£		The R. 40 sec. may have here here here. The second here of the second here.		final Trans Community	1 c			<u>.</u>	· ·	
Duration of ob	-8	inst o	Person per	inst or Short period avg. (Representa	Dr. sue man	- D					10 to 1	or 1/2 or 18						10.	-	
-	×	4 600	X. Y = 600 a my .(A)-150 a ma	150 B 000			:					:	-							
Total and and and and and and and and and and	2	2	IA PBO lem	Po Shd. IA PBO levels (* near bottom)	pottom)			, , , , , , , , , , , , , , , , , , ,	:	:	(:	:	-	1						•
	E C	The Gard bro	3 673	The state of the s		i			:	:	Series .									
Ob. synch. X.Y. (2) 19 min, () min.	X Y B	io min	: C			; ; ;	:	:	:		1						-			

"Includes Men servicesta of Swelle

	03 03 04 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	5500 tps 33 C 5500 tps 33 C		0.02.0	25. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	9 In 1.5 to 78	1 3 6 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
e Proce	· 8	5500 to 2.00 5500 tps 30 t		97.9	to 2 to 3 the 3 sec		20 (10 m)	
ļ.	9	, fg	++	-	ft or 10°	-		
	01 7 5	+	- +				1 2 2 3 4 4	
THE PART OF THE PA		+	-		10			
X. Y. 28 (15)	1				min 30 to		20 V	
Sempling 7 1/1/1990		+ +	•		- d 001		min min min min min min min min min min	•
Diese 6 bre	+	*		•	+ + + + + + + + + + + + + + + + + + +	†	· · · · · · · · · · · · · · · · · · ·	
Ob served X, Y 20 mb	++	***	-+-			1		1
1 2510	+ + 1		+		EIE O	† : ·	- te - 4	* * *

Requirements partially more and why

Requirements set seet set with Table 19 in the Holson Straits and Haffin Sav. Lentative "system" does not include those are use.

• Boulous Corres. Considered beyond Save buoy 80.4.

4 **

REFINED AMO 4 26 REQUIREMENTS (CONTING B

ORSE AMEN PARAMETERS NOW IN GUESTION PLATING													
Personer		Bethy metry											
Geo 1408		M. 10 20 20	-	+	***************************************		 T	TT		, , , , , , , , , , , , , , , , , , ,		~ 4	
Vertical layer	ž	Pottom									÷	-	
į		5 to 10,000 m				THE STATE OF SERVICES AND ADDRESS OF THE SERVICES AND ADDR				:			
Maximum error	rroe	2 m					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			i i i		**	
Devestor of ob-	8	5 10 mats							-		-	; †	
	Х. Т	30 to 100 a. mai										+	:
in the second	z	N/A								<u> </u>		· •	
	, i	X/X								; +		-	
(3)	X. Y	N/A						!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!				-	
	2	N/A									+	+	
1					**************************************	A			-				

Parameter		Bottoe		-				-	-		-		
		Sanda a	7					-					
	5										•	•	
Vertical syst	ı	Bothera								1	-	; -	
Hara		٧/٣					-	ļ		-	·	+	
Measureum erro	. 2	٧,٧								-		+	
Duretton of ob	8	A/A							-				ŧ .
	×	30 to 100 s. mi								: : :	-	-	
Samping Informatty	2	K/X									-	÷	:
	1	V/N									+	-	
4	>- X	N/A				 •			+				
	N	V/W			1	-			_				

ASSESSMENT SHFET FOR REFINED D. 14 REQUIREMENTS

Currection Gir. Curr.	<u>«</u>	Para meters						CEANOGRAPHIC	4 PHIC					_		7	F TF. JR	AP TENNING A			
Date Committee's to story A committee Committee	Characteria	/3	Our Br	2	Sa iteatty	3 2	7 2 3	W press	Ambient Light	Ambient nonve		4 4	Per ra	3	Atmos	Atmi	1 1	Inter-	Pracip	, t	Wind spend
0 to 0 to	O CONTRACTOR OF THE PARTY OF TH		1	1 20:	A 80 00 M	· A serios	S CORPE	0 000 01 110	2					-							
10 to 15 to 10 t	Vertical h	i i	1	1000	depth				1			Bertero		-	;	·	f bacey m	ment to vurta	2	:	:
0 001 0/000 1 tps 0 001-C 0 1 8 3 % 25 0 c 1 1 4 0 c 1 1 4 0 c 1 1 1 4 0 c 1 1 1 4 0 c 1 1 1 4 0 c 1 1 1 4 0 c 1 1 1 4 0 c 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Panes (5)	7	9 9	9 3	0 to 42 6/00		9.00 0.00	ì	0 % OS £	\$0.05 20.05	8	3 2	= ¥	1 (2) 1 (a)	:3 \$ = = = =	3 860	S 52	\$ 45 A	21 4	S .	3
and it man before.	Max erres			0 8	9 01 0/00	3	0 01 °C	#1 o	13	#	82	2 19	\$ ~	÷ .	- <u>-</u>	Ē	,	· =	, , , , , , , , , , , , , , , , , , ,	1 2	
- 150 ml 2 larvels Sarface	S S S S S S S S S S S S S S S S S S S	8	1	1	And any. (P.		Ê		, -			7		-	-						: !
evela (* meur bodboar) (* 1 brevila		¥. ¥	3	BANK I	- 150 a. m	-	The state of the s		1		:			-						1	:
		Z	Z	A PEO Les	- Beer	botton			2 bereits		1	Serface	*				İ			1	!
	•	ţ	·	Ĭ						1			-	-		:		:		!	
	9	X. T. (8		1				1		and the second section is a second				-						-	

Vertical living	S C C C C C C C C C C C C C C C C C C C	S S	Date Oce	Onegraphic leading Global Deep Ocean/N American Court	Ican Court	2	-	}	-			-					
		3			3	5000 m								-			
		9	35	3	9	9			+-	+-	-		-	•	•	+	
'		X	6 Ete	9	40 T	 U		~									
Maximum orrer	9 222 8		0.9 km	390 100	¥10	٠		.	+			-	ļ		4 :	1	
Deration of the	8	75			137	-	÷	<u> </u>		-		1	-	*	•	+	
		4			1	-~ -		** www.**				٠.					
	×		3		8 §	000 000 000 000 000 000 000 000 000 00) }							†·		†	
	-	18	8	-	1 - B	D 00 100	Ē		-	- 1	(_				
Interest ty	P-I	IA PRO Bad	, 2		¥.	A Peo Std	1					•			*	÷	
	F			+		5 5 1	5	+	*	+	+-	· į	-	*	+	•	
		11.05		Ī	cl e			• •	-	of Prima	. **						
(B	×	# / Y		Ŧ	x	-			ļ !	•	-	<u> </u>	-	+	+	;	
	N	5 W Lb		1	SIR V	- 5	+	-			+	: +	:	÷-		†	

Requirements fully next

Requirements partially seat and why All requirements its above would be met with the except on of a The 5 min frequency of the Tentative Tensem's values are 5.3 hrs.

* The required observed is for 20 days for correlation with tide its. This it time requirement her limit is graph on the limit other locations and make the fulfilled to correlations on the fulfilled to correlations.

44.

Requirements and must why

Tital Theretaities - Discertainty about ob from buov : attended for long periods

REPRESON 4 1 31-37 REQUIREMENTS CONTINUED

Parameter		Tabel Brownia	inh mount in	I MANUEL	Here is a fine								
(Jee Jemstone	3	Dee Oresa	Deep Oresa/North American Coase		-	-	-		-		-4	*****	
Vertical large	Ĭ	Holles		**	k				-		>		No.
j						-				-+			
Martenas error	errae	£		-	+	+	+			- +	. •		
Durelles of the		Non. Tag	The same of the sa	-	+	-					; ; ;	-	•
	×	2 88 × ×								-			
	•	Α.Α		-		-	+-						. •
	j	1		 		-	+				••••		•
16.4	×	┿┷				+					· ·	•	
		۸/۸			-			+		+	-	,	

VARANET		PARAMET THE COMMENCE BEYOND THE STATES	THE S-TABLE	ATTE OF THE A	AT Prof. THE	ATTE OF SAME AND THE TENTATIVELY PROPOSED DAILS BUOF STREET	1 CAROGORA	PATA BUON	Water 1				
Perumenter							-	-			,		
3	1	-					4		-		4		
Vertical layer						:	- - - - - - - - - - - - - -	;					
					:			+	-			a.	
Maximum orror	Net error				:	÷	÷	-			•	•	,
Duration of a	3				 					 .		+	
	×			:			·				•		
Prompto A	7	1			÷		- -	+	-			•	
	į			1	<i>!</i>	•	÷	; ÷	1	•		•	
1 1 W W W W W W W W W W W W W W W W W W). 				· · · · · · · · · · · · · · · · · · ·				······································				•
Nemarks		-								·	• • • • •	•	

The first transfer of the formation of the first transfer of the f	Pro mare		i	;			CKFASCRIBAPHIC	APHIC					}	1		3					•
The following th		₫.	Land Land		7	7 F	******	A statel wat	Ambient	Trans	*	900 20 7 8 80			1		, ,			1	
The four mant is varied to the first of the	Charmotheri ellica		.		ì	Ì	Ť	Ę,		parene y		ž	·	È	į		y y	in the contract of the contrac			
The state mant is sufficient to the state of	- Arete in		1	#-0.4 th -0.8	A America	4 Can et	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The second second			+	1	+	-	1		1		•		
	Vertical layer	:	2		:						,										
					,				:	7	1		_			A . OF .	ALT WILL	enter afte			
			3	43.5		: د د	ै 3 3 3	3 2		3 %	3 9		2 T				 				2
	NA PER					Y = 0				*	£		· ·	· <u>·</u>		Ē E			i.	* 1.	÷ ;
130 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	Daniel of the			Las perced y		E					*	 3÷ 15						**			-
1		غ بر بر	1 :	Two 1500 -	2 1 1 2 4	<i>;</i>							+								
		2	ž	0 1-1-1-1	L. Parkers	•		7			1		+								
		-	3		:	:		-					+								
	-	4	· [•												

2. REFERRED AMOGNAM. REMAINMENTS. WITH. PRM. Basesard in Effect of Polistants on their Figs. all and in concession of the case of

 $IV_{-S,i}$

Campropies, languages	1	Committal & Rethensions & Thungen to any	1	7 . W. 11 . 97 M. M				-	and the figure and entering of the figure and the following states and the figure					
						A ≯ AFE	A SECURE OF SECURE AND SECURE AS A SECURE OF SECURE AS A SECURE OF SECURE AS A SECURE OF SECURE AS A SECURITARIZED AS A SECURITARIZED AS A SECURITARIZED AS A SECURITARIZED AS A SECURITARIZED AS A SECURE AS A SECURITARIZED AS A	2 1 30	# S					
Vertical layer	:		a 8		Ŧ	Š Ž	-	⊢ - ↓	·	- -	٠	,	•	
1		0 to 0 to 0 to 0 to 0 to 0 to 0 to 0 to	\ \frac{1}{5}	£	\$ 5 £	£ 3 \$	ă ș	\$	27, 120	÷	• • • • • • • • • • • • • • • • • • •			T
Man I mean or run		0.03 km	ő		:	\$ 3	0 1 2 0 1 2 0 1 1 0 1 1 0 1 1 0 0 1 1 0 0 1 1 0 0 0 0 1 0	7		1048 mt 4001	`•	of the man to the	· ÷	7
Parista d'a	4				4		to traffor 13	**	·	ê.	ື. ເຸ			
	₽	一	8118	*	A	es es	. 		7		: •			4
7 9		X Part . M. Clarenters	7. Y	7 +	•			•	ī	•	•	•	•	1
*	1		H		. <u></u>			•	Ŧ				•	· - Ţ
+	,		a Are		Ŧ	e la la la la la la la la la la la la la	++	• •	· Ŧ					7
	- ~	2 C O	eles C	•	7	utan 6!	* * *	· • • •	1	, 444.61	• •			å
N. S. S. C. S. A. MORE ASSESSMENT	A. M. C. A.		1 min	***	Ŧ	n) w [T	x 7	+	T		• •			•
														1 1

Requirements halfs man

Response mental partially ment and why All requiremental lathed in Jahrens would be true with the respictor of a The family Faporing of 23 to 54 a.m. out to 50 c.m. of the country restormance whether apparently to make the

Page fremants and and age of the

Montand Blood not be-Aligner area parameters are not the page Either integed better declar early about the mission.
 Aligner area parameters faring at up of 3nd page. Either integed better done to other means or their is oncertainty about on from some at 31 parameters issued at the bottom of 3nd page. Considered beyond deer boots.

REPTYED AM: #

7
-
-
,
- 6
-
-
-
ď.
ê
3
 -
3.
~
É
4
۳
÷
**
£
•
-
₹.
7
R.
-
r
-
ŧ
3
2
*
M
A KK
3
4
A.R.Y.A
Ş
,
2

Ì		Total cleared	Buddey wastery Clarectum to an	Tick) Cortestion	Southern Principles	Prince gattion Sediment	Yediment Yours	Turbid.	x_	How thou ago, at 1	Call Age	\$ 14 14 14 1	***************************************
free learned box		Cases Are	Connette Arresa and Estimative										
Vertical layer	į	\$	Brattanen	Prothons	Holds: m	2	. attent	Ste to the m		i. apri			, , , , , , , , , , , , , , , , , , ,
1		2 km (1997)	Act states			· · ·			± 3	· Victorial Annual Control	14-57-14 1	### ### ### ##########################	
		<u>,</u>		N/A staach	N.A stated	*	NAT CERTAIN	. 36	<u></u>	- ·	*	* :-	4 · · · · · · · · · · · · · · · · · · ·
(broken a b	•	1								1			* -
:	. »	10 to 10 m	[6 to 40 a sof 1-30 to ma of the con a 100 a well adequates:	Service and									
Į į	N	< x	۷,	y E	*	4	: : : *	2 lev. la	AND INTE			•	
	j	6 or 1 hrs					مفت د			*****		• •	- 1
×	×	1.9							: : :	++		••	
		4/k						natan .		++		•	

|--|

			The second secon		Western Commence of Architecture of the Commence	The second secon	***************************************		a some sea or commence or commence of the				,
10 to 10 to	Unit National	Nory Han	tan sepan	Chromotan		Merciety.	Nr. ka	\$	747	1(848)1	Mangare	. \$	•
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-	1	9.4(17)						7	. 4			
10 ms. 10	vertical layer	V. 606							⊢ √		· •		
		<u>. 2 2</u>	•	33 9000	3000	نہ	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	or second		- ar04727 z.n	24 35 - 3		
	Marcianum error	*	; ; ; ; ; ;								in the second		. 1
7 7 8 3 20 C 20 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	*							<u>.</u>					
17 () 3 () 4 ()	-		· · · · · · · · · · · · · · · · · · ·									•	
		1 L 7								ي ن		. 1 .	
	. F.	<u>. </u>	•						. →				
	A A A A A A A A A A A A A A A A A A A	10 802.							* **				

to caustic ampossibilities where considerations. The absorptions are in the experience transformation

.

ASSESSMENT WERE FOR BEHAVIOUS AND HEQUIREMENTS

TENTATIVELY PROPERTY NUMBER SENSING LAPARTON Y	N ACHA	TO NEW PR	MAN CAPAR	* 4. Car. 1. 4												÷	STATE OF THE SAN	i y
Pac materia	To a	: '			: `	SHEETE WARREN		:		:		-		,	ME FE CHECK CALLCA			
***************************************		Security (No. 1) (No.	Agamet Ma			Paydes Aminest Ambient Stein, Anne menalityments, Ann Astern Company of Mark Stein Stein Stein	A comment Completed Trans. Asset of 1804 States	Versitient.	Trans.	A	Fee Int	* * * * * * * * * * * * * * * * * * *	* 4.00		A CRIMAN CONTRACTOR TOWNS THE SERVICE	1 7		* *
THE ROLL OF THE PERSON CONTRACTOR OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF THE PERSON OF T	1	THE STATE OF THE S	V 8-0 "	N A SECTION	41 MAR 1	and to the v	and the same of th	والمستق فيدخنك فتنسه		·	+	-		*	interpretabilities and a second secon	-		•
Yartheal layer		Martine to Vice in tape	, Q							1				•	The second section of the second section of the second section	9		
Manage of the Monte.	• • • • •	The state of the s	. 3	3 3	ر فر د د مانيو						1	· · · · · · · · · · · · · · · · · · ·	د نبر 					
Man or ros	***	4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	*	***					τ.		, , , , , , , , , , , , , , , , , , ,						•	
4 4 4 4		land or fluori onefeed any . Land	To Bas persus	-						. 1							,	
, ed	ر به د ده استان	A. T C	28 4 N 47 4								÷	-						-
Commandity Contract of the Contract of Con	R .	STEEL LA FORM .	mais :: 2000	Sept Braters						Artes		•						
	1	**										•						. •
to a series of the series of	8																	\$
The contraction of the contracti		1					The same of the sa					1						

A CONTRACTOR OF THE CONTRACTOR							
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				•		
The state of the s	· · · · · ·	•	Prime and prime	,··.	:	* :	
A V Class with convex against the convex against th	· 15 A		• •	a kalip ayana akasad g		,	
A Y Character agency of the control	* 1		en e	,			
A Commence against a commence ag	; ; !		• .) · ·		÷	•
See and the see of the	A 45 4 75			e i	•		
		•	•	· · · · · · · · · · · · · · · · · · ·			٠
	, C 02.15				÷ ,		
() (1 1 1 1 1 1 1 1 1 1		4 4 4				

Hampier or material Tales States

There is a marked particular and and one. In the particular particular is a state of the particular particular is a second of the first of the particular of the particular is a second of the particular of the particular is a second of the particular of the particular is a second of the particular particular is a second of the particular pa

Mangang remainds and made and when the control of t

REPINED AMO # 44 REQ: (REMENTS CONTINES

Parameter		uad in c	idal fluct													
Gec (ocation	ì	(majore Bay	4	•			: -!	•				-	-		_	
Vertica	i	Ste to 200 m.	Boston				k				.					
duny		3 to 7 m i	You stated							.	Pina su . t -					
Martmum error	101	3.4	Vor stated		:		•	÷		:	•				•	
Duration of ob	8	e e	eri Ø			ļ 	.				; • • • • • • • • • • • • • • • • • • •	 				
	>- ×	Same ac p. e.	رو رو			! !						: - *			•	
Sampling intensity	2	10 g % % \1	Bottom					•				+		;		
	The	Ē	12 hrs													
138	X. 3	10 mtp	10 mtp				+					.	÷		¢	
	2	योक्ट थे।	∀ /₹			_	-		-		-	; ;	:			

×
F
₹.
BUICT
YEV
Ċ
OSE
PROP
VELY
ATTVE
2
ETE
F
Š
ART
THE
9
TATE
ŝ
ž
HE S
OND
BEYON
GED
-
GIBN:
ဗ
8
E1
3
ď

Parameter		i theate	Phosphate	Vitrate					
Geo tocstdon		One lose Bay			management of the second of th		T	•	
Vertical laver		8fc to 200 m		•					
Renge		0 to 46				•	+		-
Maximum error	7754	54				1	•	Panta sa a a	•
Duration of ob-	8	l motor						•	-
	> x	Same a	Same as page 1			‡ ~	• -	•	
Sam ing interacti	2	10 m s 50 m 1AP8) level	(0 m s 50 m APS levels = 50 m			:	4		
	Time	12 hrs		•		-		▶ ===	•
	x. Y	10 mir.					:		•
e See a Co		10 min		*				•	

. 23 %

TENTATIVELY PROPUSED NOW SENSING CATABILITIES	LY PROP	IN CERN	Mar SCN	MC CA TEN	IL TOKE														, Levi	Recutated 20 Aug. 8.8	¥	
الم الم	PeraLotere					Ĉ	OCEANOGRAPHIC	PHIC				:				¥	Treak	METERICATION	:	:	:	_
/		Curr. Curr.	Curr	a di mi	Sound	TO THE	Water W press Ambient Ambient Trans Wave messaremonts. Air Atmes Atraus	Ambient	Ambienc	Su 1 / 1	A	MEBLING THE	 - - - -	¥1.4	Atmin		inner trans	finne	Property Wind Wind	the same	3	
Characteristics	/•	- - 5	dir. speed		paodu	age age	(depoth) light eviting	li g fet	eg Pr	A:Wascry:t	Ē	Par		ĝ	ž	elect pives point lation	pegut	6.04	1	ž	(Vanado la	
Geographic Location Deep Ocean (60*N to	COURT, COM	Odea	1.09) ame	Deep Ocean (80*N to 60*8) H. American Count out to 406 n. mi	America.	a Comot on	Picka Count out to 400 n	ē					- -					1		·		-
Vertical lever		Berface	Berface to 5000 an depth	45	!				:		Burtace					Top	שנה שיניו	Top of losser mast to numbers	#C.#			
Fuage (5-yr 80A)		3 5	0.00 0.00 0.00	S	£5:10 to	et et	·	0.0000	01.08	3 9	<u>.</u>	٤	<u>.</u>	3	S	too to	3 6	3 10 1	ate the other was a sector at the notion of the	3	6 6	
		2		8			2	G0 07 / G1/63	00 07	11 000 W / W / W / W / W / W / W / W / W /	11 66 1	£	ź	-	:	E .	·	E 4	Maria and the state of the stat		#1 # 1 # 1	
Max error (5-yr 30.M)		·,	0.03 kts or 1%	0.03 kts	\$	3.10	0 17	Ξ	€	\$ 2	0.2 fs 0.1 spec or 10% or 1%	1 1 Mg C	. <u></u>	<u> </u>	- K	0.2 fs, 0.1 mec. 5* 0.1 rc, 0.1 kv, 0.1 mb, or 10f, or 10f	1	<u> </u>			111 / 2	
Deration of ob.	£	F	Shart per	inst. or Shart period avg. Napraeschaffve	mprosecule 22	Section)				7 :: -₹	-i :	~	+	-	-•	-		-		_		
	×. ₹	× 600 n	S 600 B. m. 150 B. 35	150 m Cat		i i	:			:		i	*									
lateracity	2	2	IA PBC Jer	20 Sud. LA FBC Jevula (* man luntions	(cotton)			2 Jerrelia			Serface		÷	:								
,	į	e kraje kra	5								-	:	- -		:							-
Ob. syuch. X.Y. (2) 10 min, (1 selp.)	X 7.	10 miles,	(1 ada)											:		•					Ī	

	Ceographic location	posttos		Florida straits off Bimini, Bahamas and Miami	Charman are	Man						1	-		
0 to 25 to 50 to	Vertical in	Je.	Sec to by	Atom 20 Es	26.26	c to to			2	.	>	·		35	÷
10 0.25 0.5°C	Range		30.0	% T	- 3	9 0	•	03 5 EO 72	G 12		*	- -		2 t	1 3 :
10 sec 6vg 1 mile xeg. of 1 mile x	Maximum '	Tros	10.	0.25 K0	· ·	200	•	# 5.5 m	98	·	 - · - · -	•	~	. =	
X. Y Special points about 3 and 'n. mi from seand source Z 25, 50, 170 Time link Unk "nk X. Y 5 min Finite 1 min	Dernagon of	-8	10 GBC &	85	5	:	·	Linia avg. of	•	·	•	• · ·	•	10 acc	
71.00 136, 200 6.00 7.00 10.000000 7.00 116, 200 6.00, 150 m.to loctoon 7.00 116, 200 6.00, 150 m.to loctoon 7.00 116 116 116 116 116 116 116 116 116 1		X. Y	Special 1	points about 3 and 7 n	mi from s	· · · · · · · · · · · · · · · · · · ·	† ;			· · · · · · · · · · · · · · · · · · ·		:	:		<u>*</u>
Time that that	Sempling Interestsy	2	25, 50,	00 20 m to logical	1			4 /2	× ×		· -+	•			,
X.Y 5 min 5 min 5 min 7 min 7 min 1		7. BE	A de l	Unik	 	**************************************	· · · · · · · · · · · · · · · · · · ·	- #u	a a	÷	· · · · · · · · · · · · · · · · · · ·	•	-• ··	. ¥	*
96	€ E	X, Y		5 10 12	1	min	+	- mfn	, mir	.4	<	•		1.30	1116
		~	1 min		_	a) to		· · · · · · · · · · · · · · · · · · ·	× × ×	: ~	+		4 · –	,	-

RESULTS OF ABBESINENT

Requirements fully met:

Requirements partially met als why. All requirements listed in 2 above would be met with the exception of a The symboling of 3 and 7 n. and (CMA). Tentative "system" spacing is about 100 n. ini.

9. The 5 min synch, of ohy. Tentative "system" allows up to 14 min.

2. The unknown frequency of oby when less than 3 hrs. Tentative "system" frequency is 3 nrs.

Regarements not most and why

All requirements in near-shore waters (within 20 p mi of shore). Tentative "system" starts about 25 n, int out.

Tidal fluctuation: (sugged better done by other means in this case since wicectainty about ob. from hory unattended for long periods.

: altre

REQUIRENTS (Continued) REPTORED AMO # 47

Geo location Porida Str. Geo location Porida Str. Str. in Maximum Str. Out to 1 to 2 ft 1 to 2 ft 1 to 2 ft 1 to 3 ft 1 to	Tidal fluct. Forida Straits Sfc to before max 800 m. 10 to 0.1 to 0.2 ft				+ + +			
. 8	A Straits D. max 800 m	∮ ├ 					· ·	
	E TRAK 600 TR	} +		· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·		
MB error		 			· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	++ -	
							•	
				+				
Duration of ob Inst.				 -	.		: 	:
X. Y. Spec., points	x thus						:	
Descripting 2 N	N/A				•	•	· •	, -
Time								-
A X, Y Cata	ln			 			:	:
Z	N/A		The same of the sa			•	1	:

Par amorter				*******						
Geo increttion	8						: :			-
Vertical layer	, er		-						<u></u>	·
Range								:	•	•
Mazden error	error			Promote the second seco				-		•
Duration of ob	8								·	
	Х. Ү						•		•	•
Sampling intensity	Z						ļ		:	
	Time							-		·
4500.	;_ ×			-			:			
	Z					:	:	:		; +
Remarks							-			

ر. الع

« /	Para movers						OCEANOGRAPHIC	A PHIC				-	-			Z	METEOROR (AGCA)	CKGCAT		00 Vn. 07 Paul	
/	1	Curr	Curr. Curr.	Selto.	Soco	Water	Water W press Ambient Ambient Trans. Nave messurements.	Ambient	A mestern:	Trans	Nave III	XHAIRES	, 31r.	Air Atmos Atmos	timos	Atmos	Dew Troo	Trans.	Promette With	be-	3
Carrotte Manual		j		-		8	ę.	igh:	nca an	parency.	¥	190	ä	du s	i sec		point	intlon	57.		Palady
Osocyrapisto Ioostfere	loogher	O Case	Cars (60°	A to 60.8	A Decio	in Count	Deep Oceans (601M to 80*8/N. American Count out to 400 n. ms	mi .	-			•	-	+	1		1		7		
Vertical inyer	zeki	Sante	Burfa to 5500 to depth	de part						[Ser. Tr. 6		-+-		:	,		The state of the s	1		
Marge (5-yr 90A)	4.0k)	93.0 8	51 80 °	0 to	4500 to	Ĺ	-5 to 9 to 104	0 to 2 0 -40 to		0.50	0 to	1 to 0 to 55 to 0 to	ر د د د د	25 to 0		1 00 to	1 52	0.0110	San tu -251 0.91 to 0.12 0 to		. 9
Mex error		÷,	9.03 ids	9.03 tds 9.01 9/90 1 fbe	- A		\$1.6	1.1			0.2 #				01 kv 0 1 mb	ÊÊ	0 % 7 0	E 50 52	0.1 mb 0.2 cc 13 m (n. hr 36 or		150 Kts
Duration of ob	8	T Y	No.	The Mang. (F	Inn. or More period ang. (Roprosentative)	Ē					or 10% or 19	or 14	+			:			th. Pr	:	
	E-K	28.50	100	5 875 a. me/100-150 a. ma									-		:	:	:		:		
The state of	2	20 PM	LA PBO Ien	20 EM. IA PBO levels (* near bottom)	bottom)			2 levein			Burface		+	-						1	
	E.	The Chrysters	5										+	-	-		!				
Oth. seyments. X.Y. (2) 10 miles, (1 miles)	X, V, (2)	10 mile,	(1 mbs)								1										

"Includes Measurements of Beelle

2. REFINED AMO + 45 REQUIREMENTS NSF, University of Mamin Research on Ocean

Geographic location	NOCES OF		ic and Pa	Atlantic and Pacific 12"N to 12"S	!			
Vertical layer	12	喜		T	10	104	5	
Raise		13 O E	0.1 to	3.5	1- 0	7 (-)	03.0	C 8
Maximum error	Frak	5:	0.5 kts	0.5 kts 70.61 5.00	=	3,620		- 18 Set
Paraties of	18	15			12	198		
	×	#		1		15 50	AG.	40. -
Sempling intensity	2	Š			63-C	10. mg/	(1.0)	
	71.00	24 are			1 2	24 brs	Y X 1	* ·
tout a	×	ž.	87	15	2	NOT	10.52	24 BI 24 BI 2
	7	pertens	stated	Dest ans	5	P8178	N EX	Nat stated
10000					1		7 K.	*tated

RESULTS OF ASSESSMENT

Requirements fully met:

Requireness partially met and why All requirements listed in 2 above would be met with the exception of

The X, Y spacing of 15 to 30 n. ms Tentative "system" has initial specing of 5(4) n. mi in IXO.

The Z ampling intensity Tentative "system" IAPSO levels are more gross.

The "hot stated" and "unknown" requirement. Tentative "system" may not satisfy some of these requirements if they are more stringent than "system" values.

Requirements and most and why

Colorgen, Tidal Fluctuation, and Vertical Current. On etakinty about ob. from buoy, mattended for long periods.

*These are 1967 c a requirements not refused 110 ms from 0–30, 1–5 m from 30–12c m. 8 m from 120–136 m

1.1Ke 1

2

REFINED AMO # 49 REQUIREMENTS (Continued)

Parameter			1.de.]	Vertica.		-	-	-		-				-
		no de la	fluctuetion.	current			-							
Geo. location	8	127N to 1278	12"N to 12"8 Atlanti. and Pacific	verffic							4	-		
Vertical layer	yer	Z C				-					-			Ţ
Rather		11055日八	Not	Not										
Maximum error	FFFOR	0 S mal/1	Not stated	Not stated							-		-	!
Deregon of ob	8	Not stated									-		-	
	×	No. stated									7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		-	
Barn, ling (shearetty	2	Not stated			THE REAL PROPERTY OF THE PARTY						<u> </u>			
	in the second	2 bra								The second secon				
1	×	Not stated				-	-	+	-			1	+	
	2	Note stated					-			The second section is a second second			-	

SE ART FOR THE PENTATURELY PROPOSED DATA BINDS SEVERE	2000
200	
1 4 7	
ē,	
300	
D #0	
Y 1.3	
A 117	
2	
H	
FOR	
AR.	
MOERRED REVOKE THE 3- YR STATE OF THE ART FOR THE TENTAL	
30	
IATE	į
ra sr	
, Å,	-
118	
NO.	
38.0	
ERE	
ARAKETERS CORBED	
ĭ M	-
FIE	
ARAKI	
<	i

									-	and the same of the same of the same of	the second second second second second	 The same of the same of the
reverse	_	_								* ***		
Geo tocation	9				·		The second secon	, , , , , , , , , , , , , , , , , , ,			-	
Vertical layer	NY SY			-	-		The state of the s					-
M.C.Sager	!											
Maximum erre	.34.88											
During on of on	6				AND AND THE RESIDENCE AND AND AND AND AND AND AND AND AND AND		-			-		-
	×				-			-				-
Betherania:	2											
	1,1394					ALCOHOLOGY BONDS WAS A STREET						
1.00 mm	×	★ ~~						-	-			
	~								***************************************		-	
2		-	Aminetics and materials and another the	der immenser nem eine general geweiser	And in case of the first of the same of th	Andrewson and the primer departments of	Mental action where the partition of	Management of State o	The second secon	-		

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

TENTATIVELY PROPORED NORS STARING CAPAINLITES

		OCEANOGRAPHIC	RAPHIC								20	Calculation	MANUACON CARON	-	a de la constante de la consta	
8	-		-					+	-		-					
Palitate .			, and em	3000000	rana-	Wave presenterments	the resident			W. CO.	\$5000 m	· ·	iran.	Pracio	W. 120	1
		7. S		\$ 6 G	N Super	ĭ	Sec.	S.	- ALC 80	ECT.	alect perses press issues	Will have	5575	ħ	Š	Sa Call
Deep Comm North to Straty A American Count out to 466 a 18	Fricas Cons	CORR COACH COOK to 460 a 133	1 78					-	P. Carrie	and the second	age visionally	1	September 1	The special and the special property of the special special special special special special special special sp		
Perfect to the second						Surface			İ		9				!	
-	1	Transman America		1							5	A	Comment of the commen	2		
2.47		-5 to 10 10° -			2 1	3 3	0 to 16 to 25 to 19 25	0.00	0 01 5		\$00 to	.25 50	\$66 to 25 to 9 01 to 0	0-12	9	9 10
8			27		9/4/21	2001	200	200	<u> </u>	2	自動	 မှန္	2.6 W/B	in./ ky	500	15C Kts
0.07 126 3.41 U/Q. 1 Per		± 2	*	3 %	8.	0.2 (% 6.1 sec y	C. 1 300C	•	0 0.18	0 A 10	0 i mib 6 7 °C 19	2 4 C	63	5.0	:	9 5 Ktg
try. or Bert paried eve. (Represent	1000							+	4	_	7			In. II		or 5%
4/100-150 m	-							+								
								-								
rata (* seer bottoe	â		2 levelo			Fritze		+			-		-			
								+						7.44		
		-						-							-	
1.	ts (* seer bottos	90 DM. LAPRO levels (* mear bottom) 6 km/5 levs 10 mbs, (1 mbs)	la (· sear bottom)					2 levelo	2 levelo	2 levelo	2 levelo	2 levelo	2 levelo	2 levelo	2 levelo	2 levelo

1. REFINED AMO 9: 51 SQUIREMENTS NEP, Orngon State University - Resea

		1	100 Milk Square Compared at 45 %,	12 M. 125 'V	*									
	23		-	۲	5	-								
	200 E				É			386		30 55	35)	Sec to	Sfc to	o Se to
	200	Т	5			+	4	+		+15 日		, 15 m	. 15	15 m 15 m
8			i o	*O *	3 1			Unk to		1				!
Dureston of the	1	7	3	+	107	+		24.22		*		1	No.	ž L
Dureston of the	*				-			-		-	-			+
Dureston of the				, 				*		n n	ב	Unit	12.	Link
	9 20	S S	10 to	45	S	+		+	-	-		-	,	
	20 mts 20 mts	1	20 100			_		1841		Contract	1	Link	- T	1
×. ×		-	1	+		-		-		_	-			Š
		5	-	1	-	-1				Contract	-			+-
	4	A - 3 6 - W								- Page	i	-	-	1
7	;	1						+		西西	-	-		
	•	 	AE 0-6	w) 	- 12 0			200		Cak	1	1	125	1
Ę.						+		-	-	*				j O
	Varion/Continuous		Ť											_
4.7	-	{			-	†	-	5	+			1		-
1	1	1		-	4	_		-						
2	100	1		-		+		7		n min	2	5 mda	5 man	S min
		1		4						Zini,	100	-	T frak	1.5

Departments fally men

All requiretsents taste in 2 above ... onlid be met with the exception of Unit (maybe about 5 or 25 n.m.). Tentative "system" has initial specing of 100—150 n.m.) in CNA.

The X. Y sampling intensity of the (maybe about 5 or 25 n. mi). Testative "system" has initial spacing of 100—150 n. mi in CNA.

The 5 mm X. Y synch of dir. Testative "system" allows 10 min.

The "manners" and "varies" requirements. Testative "system" may not satisfy some of these requirements if they are core stringent than "system" values, mesocralogical data: Testative "system" will meet this requirement only to the extent it coincides with "system" parameters.

Apparations and units and why.

• Remarkable, Temperations Gracker and Whad Velocity to 1500 ft above the buc mast: Considered beyond the 5-yr buoy 30A.

Page :

These are 1967 data committeesexis not refused.

Page 2

REFINED AMO # 51 REQUEREMENTS (Continued)

CHET AKE	AAN A	AET ENG 40 M	CONTROL MO	A THE TENTAL	CALT ARIA P LAMBIERS AND INCIDENCE WAS THE TENTATIVELY PROPERED BATA BLOY SYSTEM	D DATA BUOY	SYSTEM			2	Revised 20 Aug.
Parameter											
Geo location	10th				Vice washing a death down to the second state of the second state				 -		
Vertical layer	Lyer										
į											,
Maudinum error	erro										
Deration of ab	8										
	×										
Î	2										
	, 10 10 10 10 10 10 10 10 10 10 10 10 10										
8	^										
	Z								-		
								The second secon			

PARAMETERS COMMEDIENED BEYOND THE S- YR STATE OF THE ART FOR THE TENTATIVELY PROPOSED DATA BUOY SYSTEM

				-					
Parameter		Thu man de de	ř	2 2	Wind				
		-	Tradhera	peeds	direction				
Ceo location	1	100 mm mg.m.r.	4.5	P 98 7	•	A STATE OF THE PROPERTY OF THE		-	
Vertical layer	,	Mc 4,500 m	l i		T				
Range		No entiry							
Maximum error	ķ	#11							İ
Duretton of ob	٩	No seetry			Ā				
	X. Y	No sectry					THE RESIDENCE AND ADDRESS OF THE PERSON OF T		
Sampling interestry	2	No entry	The state of the s						
	1 ime	Cont							1
45	- -	S rade							
	7	No estary					-		

Nome unte

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

1 TENTATIVELY PROPOSED NDSS SENSING CAPABILITIES

£ /	Pers sessors					0	OCEANOCRAPHIC	DHIC					-	-				į	Rer	02 pag	Rentaed 20 Aug. '68
/			1				1	7								MET	METEOROLUCACAL	DONCAL			
(/	ij		Satteetty			Water W press Ambient Ambient Trans-	Ambient	Ambient.		Wave measurements.	Malureme	ı	Air Atr	Atmos Atmos	700 D	Dew Inso-	-090	Preside diseased		200
						1		E	20186	notibe patrency	#	ř.	<u>s</u>	te mo	elect pre	press po	point la	lation	ì		Peeds
Congruptic location			-09 THE	Deep Ocean 160"N to 50"5y'N American	America		Const out to 400 n res	ē					+	-	-	-	-				
Vertical bress	ř	Perfect	Parface to Sees as depth	de oth			-	-	-	-			-	-			-		į		
	Š	3.6					- 1	-			Surran		_			Top of h	toy mast	Top of buoy must to surface	ŧ		
	Ì		10 10 42 6/	420/00	2 3 8 2 8 2 8	3.5 0.0	0 to 10*	0 to 2 c - 30 to tv/m - 20 cm	-30 to	0 1	0.10	22 5	0 to	2 to		806 to -25 to 0.01 to	5 to 0	63. To	9-12		010
Max error		.,	200	20 CO CO CO CO CO CO CO CO CO CO CO CO CO	1		i				:		100	2 0		099 mb 40*C 2 0 ly m	2 	C ly m	in./ hr 360*		16v kts
/5 gr BOA)			24 18	8	.	, ,	*	*	€	ž	0.2 ft 0.1 sec	0.2 ft 0.1 sec 5 0.1 · C	2.	٥.	01 kv (0.)	0 den (0	0.2°C 13		10 0	2.	0 5 xts
Derution of ob	8	8	THE PERSON NAMED IN	hast, or Shart period avg. (Representative)	the manufactual and	Ī			1	T		:	-	-4	_	-4	-		In. or		
	*	4 600 k	5 600 a may 100-150 a. ma	150 p. m					-												
in marks	2	28 Mark	IA PBO Leve	20 Shd, LA PBO levels (* mear bottom)	ottoen)			2 love in		-		-	+	***************************************							i !
	F	The Chryster	5								Series										
Ch eyes X.Y. (2) 10 mm. () mm.	X.Y.B	10	()										-	44							
										İ			-								

Geographic loca.don	bondon.		Deep Ocean Pacific		Geegraphic lecudos Deep Ocean Public	- Actific	
Vertical layer	ia.	Bottom 1500 m	Bottoen Bottoen 1500 m 1500 m	¥ 3	Betrom 1500 m		
P. C.		3 %	3 10 0	7 6	2 to 3.0		
Maximum error	97 TOE	٠٠	8 3	0	٠.٠٤		
Duration of ab	8	ر 10	• 10	0.7	0.		1
	×.	1 pod	Podest 1 podest	-	.:		İ
	2		1	1 1			
	Ċ.	30 miles 36 miles	36 mia	90	30 mm		
(3b synch	Α.Υ	<u F	N/A	V.7			
	7	2 min 7 min	Z Esta	-			
REST. TY OF ASSESSED	N ASSESSE	THE HT		-		The state of the s	

Kerpel remarks fully men

Requirements partially met and why All requirements listed would be met with the exception of a Vertical layer if ballow 5000 m. Tentative "system" only goes down to 5000 m.

2. templing intensity of 25 m. Tentative "system" uses standard (APS) levels (more gross).

3. These sampling intensity of 30 min. Tentative "system" is every 6 hrs.

Popularies of and and oby

*Thurse are 1967 data requirements, not refused

AISESSMENT SHEET FUR REFINED DATA REQUIREMENTS

TESTATIVELY PROPOSED SOMS SENSENG CAPABILITIES	ELY PROF	THE GENERAL	MOVER SEC	MUCAPAB	SSLIDE														Rev	92 pad	Revieed 20 Aug '68
<u>«</u>	Para motors			The same and		7	OCE A MORDRA PHIC	PHIC								¥	TEORO	METEOROLOG AL			
/		Cuer Char	(Carre		7	3	Water to press Ambient Ambie if Irans Wave measurements Air	Ambient	A mibbe it	I Change	VE 9/# 7	SAL Perme	·	⊢ ¥	ALTERNA ALTERNA	_	Dew Inso-	Insto-	Precip Wind Wind	¥.pd	Wind
Characteriation		ě	One appeared		2	Ì	dagshi light souse parency	1:1574	20.H BPP	parency	Ħ	Per Dar bemp elect press	5	È	rject		point lation	lation	9322	dır speed	peeds
(wagyange	engraphic kestion	2	0 0 0 N . CO FI THE CO	\$ 6.00 00 1	1 Transler	B (mart on	Des Desar Horn to 60-3 " American Const out to 40-5 mil	€					_								
Vertical layer	ŗ	Bries	Martine to Section depos	8							Surface					Total Control	buoy ms	Top of buoy mast to surface	. ace		
Renge IS yr W.A.	*****	010	ળાં≎ જાણાં વાહ	S	3 ·		010 0104 02010		is or	:	20	51.	3 ;	3	3	: (% III %	0; 5;	9 to 1 to 6 to 5 to 9 td 8 to 15 to 10 to 0-12 1 to 0 to	1.13	ف ا	o to
		Ž			10 10 10 10 10 10 10 10 10 10 10 10 10 1	3.04	<u>.</u>	e 2	€ 27	E .	= = = = = =		٠ چ پ		 2 2	Œ 5¥.	ر د د	2 0 th m	ים.		150 Kts
MAL STETL			9 03 Kg	0 03 Kts 1 01 0 00 1 fps	į	£1 0 3.50 0	1 0			6.7	: 2 [ğ,	· <u>·</u>	<u>.</u>	. <u>\$</u>	. 6	0.5.0	1.2 ft 10 jeer je (1.6" 11 kv) 1 mb 6.2 °C 19 0.0; 2* 15 kts		: ,	· 5 kts
S	Ž.		*								of life or 15	<u>.</u>									i.
Darredon of ob-	8	*	Bort per	Tod by	last or Short parted any Representative.	È									t	,	1				
	. بر بر	8	# # 050 001 /m # 000 :	150 a m									•								
No.	7	£	1	29 Sed LA PSk.) Jevels (. nes : nottoen)	(chother)			2 lervels			Burtace	i :	-		:	:					
	Ē	\$ 17.									:						:				
(A event) X Y . 73 (0 min, 1) min.	2. × ×	4															:	:	-	: 	! !
													•								

"Includes Ma	"includes bine sure ments of Swells	3																	
REPTARD AMO.	大学 (日本日の A MO 4 14 一 本版の表別を目的 A MO 4 15 15 15 15 15 15 15 15 15 15 15 15 15	AT WITH	ŷ	-	Amont Catophyen at Charc	STATES OF	D-Klar	irr Meas	hery-Curr Meas along Sills-Renewal of Water in Deep Basins	la - Kenes	al of Wa	ter in D	w Basins						
stage while location	Ben Continue & artificant	. artita	2	Mary and the same of the same		1													1
Vertical layer	Year actions			jesses ::	. .		_		-	-	.	jan.		j	. –	<u>-</u>	<u>-</u>		-
:	THE PROPERTY.	ع				4	•						-		-				
Kenga	, o to	 3							. .								 		<u>. </u>
:	S.									1.00									
MCELORETE OF CHA	•	g X		•	•			•	+	÷ .	÷	•		•	•	+	-	!	+
	ī,	21 J YUL	_																
(Autradian of the	8.	61.5				.			•	 .	•	•	•	•		•	+		
		,		,			,		,				_						
*	200	for stem	CONTRACT - GA	Helm Where					. .			•	•		•		+		4.
	THE REPORT OF A PARTY AND A PA	1 150 1	130	THE CASE OF CH	14.4.1.														
No constant of								•	•	•				•	•	+	•		•
# H W W W W W W W W W W W W W W W W W W	•						÷		•	•									
4	frame de marte de mare	Ē												٠		•	•	•	
	•	•				į					+	,	•	4	-	•	٠	•	- 1
, .	* **	٠ •																	
				•	:		٠		•	•	•		y -	•	*	÷	4	•	

RATE TO LA A MICH MANNEY CO. Response medical fraits ment

Monganism partials in more and size on the preparation of the new with the exception of the control of the median as an experiment of the control of the median as an experiment of the control of the median as an experiment of the control of the median as an experiment of the control of the median as an experiment of the control of the

Sequel remainds not come and why

TRATATIVE : PROFESSION STAR SCHOOL CAPABILITIES	W. CLASSING	-	W. CAPAN	4 LT TO ES														Res	Revised 20 Aug '68	88. 3m.
	-			:		CR EAMORINA PRIN			The state of the s	1		-	1		Ī	FTLORO	METEOROLOGICAL		-	
	-	ۇ ق	1]		Maker 'S press Amakent Ambient Trans	A milk ont	A explorations	1 rans		Ē		¥ 114	Almos Atmos		e Insu	- ingr	Precip Wind Wind	Wind	Wind
Characteristics	Ť			I	1 00 m	- dampe h.	T C	N/A 941	Service N	£	Per	. K	S III	alect press		praint latives	lativas	33 8	thr	Byreev!
Charge address to	_	**	Charge factor to go to be a merican Constant and to able to me	4 - 1 - 1 - 1 - 1 - 1 - 1	E London C	2 OO + OI P	274													
Certified layer	1	Burton to test in dope	•							The ribert					1	f Parish The	Top of huce mant to surface			
Anna Syr Was	. 1	Re SHO RE	3	 	3 -	2 to 10 to 1		10 € 10 €	3 %	3 8	1 to 1 to 25 to 1 to 10	34 55 - 194 E			tion tel	25 to 40*0	E 4 : 2		2 c = X	0 to
Mak orma	•	3 . 1	2 10 10 10 10 10 10 10 10 10 10 10 10 10	3	* 1 m. 0 m	*	<u>=</u>		Ž.	2.2	4 194 oz 18		; ; ;	4 5	of ky		. =	. <u></u> .		0 5 415
Denka A.	1	-	Personal Raw particle has been	- 3	į	•	4	-			~		-	•	-	4			-	
	•	H son wife see . L s										•								
	3		to the LA Public Lewists (Data Continues.	Sent Louis.			" berral !			Series									(:
1		<u> </u>										-								
Ch orest E. T. (20 10 mm;); mis.	· ·	1		•								_						1		1

THE PROPERTY OF THE PARTY OF THE	A. P. A. A. A. A. A. A. A. A. A. A. A. A. A.	S SEE S	Commercial Carciological Althorities	the france							
- secretarian	PARTITION OF THE PARTY OF THE P		arrenta of Workly Commen	The company of the contract of		-					
, actions and ,	We be hardstorm		•	03.3	N	•	.	************************************	* ~~~~	-	:
•	->			de organism			····•		- •		-
}	MO. 10 Mar 43 Jan		40°C	# C							
	20 and 20	1	0.0140	• K	• •	•	• • •	•	: +	•	
* * * 02.4)	.0 mls			20 min	•	•		•	.‡	•	
*			***	2007	•		•	٠	•-	+	
To again, a	Total 1985 1758			THE STATE OF THE S				• • • •		•	
-	Pates Breits system South the		F			+				•	
		***	T '	d hra	•		i	*	٠	•	
'A. synon	in the same	***		18 mars	·	. • .	•		•		

REPUBLIE A SERVICE AT Page Comments India and

Managements particular and why AM Proparation (tablet) in N above would be specially be specially assumption of

- The chain X V appreciate of 20 x ms and strong represents and 120 (100 x ms) in the 120 x (100 x ms) by the chain of the cha

Propositioning of many and with

The proposition of the proposition of

... 12. 14.

the breakling		-								*		•			
served leaves	***	THE ST. ST. SEC.								۰.		process to		here can	
					• -	*· · · · · ·		•	- -	.	*	•		······································	
Market Co. T.	**	\$.	.			*	•	••••••••	•	· · · · · · · · · · · · · · · · · · ·	.	
Deretton 4 &	•	La min of		.	· •	: •	•	*****	*	*	•	reference on the second	-	+	
	;- >4	14/ 106 14/ 206	300. 100	4 ************************************	•	: *			+		•	+	•	•	
li		Milky select code; chieng	Library.	*	· •	·• —	-		:	•		•	•		
	į	3		•	· •	+			•	- -	•	•	•	•	
	<u>,</u>	d at the				. 				<u>.</u>	: :	:	•	÷	
*	•	27.6				•						•	+	+	

1111	J. 197	
IDEBIEL BELLAD ENEL YESTATE OF THE AKT FOR THE TERTATIVELY PROVINGED INTA BUILT BY STEEL		
MARION BELOWED THE VINE VINE AND POS	Edry Chan at	274
PARAMETER DE CAMBLE		

TANK I I IN		AND THE VARIETY	THE LOTE	# H H H H H	TATIONES PR	ころぎこ アンギ こさぎ しきぎいく ごうそこと アモンスト 前部の かみかく むしんが 出かれて 瀬 かれて 瀬	BUCK STATE	~					
Par e amortos	Parameter Mutricella Series Cha. of	Eddy Chan of			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				-		-		
	-				:		_		ï	•	-	-	
Surfaced layers	d #	AND OF THE PERSONS				Banan -						.	
}	A MALE	No. 4 atalant P. Vo. 4 Jy 205		harri arr				-	•	• •	••••••	••••	
SAME SECTION OF THE		N. P. PERSON TON BRAINS					.	.	•	.	~	•	
An Ju Modara)	No mile eve	To make and 70 miles and	*			· · · · · · · · · · · · · · · · · · ·		,		.•	***************************************	•	
gar Maria	20/3/40	•	· ·					·-•			and the same	***	
De 13 diversal	10 MA SAM . T.	77	· · · · · · · · · · · · · · · · · · ·	•						•	· - •	•	
1 Secretaria	Times 1000	Miles, 1000s 4-ories 1000s as		٠	:	*			•				
-	Tibes 6 NTS	5 Rrs											
****	aten i	5 47 5 2 4 5 3 4 5		•	e e e e			••				v - • -	
Mante as the			•	1		*			,		Ţ.		

į

ASSESSMENT SHEET FOR REFINED IN IN REQUIREMENTS

7.2						W. R. A. M. R. M. A. PHIL	RA PHIC	•		:	:	.			3	TPORCH	METPORCHESCAL		-	
	· •		1	-	***	BERRY WE'VE STREET A MALANE A CHRAGME TERMS WE'VE STREET	Amteres	A contrasses	Trans	****	MARKINE CTA	· .	4.7	Att s trave	- arvus	- '- I	1	Precio 1 w 1mg	3	W. Dec
Characteritettee	i			1	Ì	į	Company and the second of the	1		; =	Per		Ì	elect pres. posts lation	1	N. A.	IA D. Can	3	ä) de la composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della composition della comp
Andrews Inches		.02	Dang tames 190'H to CO'Sy' Assertance	Assert	# W	THE PROPERTY OF THE PARTY OF TH	koministimi kinokuma i kinokupi pedikon promok manara da manara da manara manara manara manara. 190-19. – ISBA	A STATE OF THE STA	**************************************		4		+		-	1	-			
Vertical laper	1	then to table on dryft.	, tryte							Berface		-			100	ACAL ENGL	Foundation or season to a companie	,		
Ban 18-11 W. M.	: ;	5 H.	10 kg 42 kg 42 kg 40 kg	3 2 2 3 3	3 5	Care to the contract of the co	3 4 6	1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ŝ	3 ¥	1 to 10 to 15 to 0 to 150 to 160 to 1	2 a			- E	25 60.	25 to 6 of to 4	1990 to 25 to 0.01 to 0.12 to 0.13	.i	\$ 100 240 miles
Mar orry v	•,	2	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		* 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	· •	ī		r						1	ř				
Profes d	Į	-	Marrie goorined any (Many		į					•		-		-				:	-4	
×	•	*										 -								
	2	5	20 Stat. CA PMC) Samples (* men.) Sudhama.	-			2 1000			1		•						;		
1	in your.			:								•							;	:
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1						:				•								

Compression breather	Z X	World Preside - Keyl Cons	Ken C	Section of	P. MINTER ! B	War fel I'v menne	P41.734						The second secon			
Versional Layer	7 Sec. 1.			· •	3 3				.	• ···	•	Sec to	 	· ;		7
	S 0	3 0	82	.	, 13 E.			- *			+	8 12 18 18 18 18 18 18 18 18 18 18 18 18 18	Table to 29 to	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Pacione arre		0 00 EM (4/2)	ं ्र€ ` हें ` हें	. 4	* * * * * * * * * * * * * * * * * * * *					.	.	• • • • •	1 de 1 a	•		41 42
Dicretion of the	10 E.M.	• •	:	, T	2 c exten		•	•	*	•	•	z mm -z	3801 62	•		Zuestr Zuestn
X	3			··• - 	\$	•	•	•	•	•	•	900	Tran 200	† * ` ` • ‡ `	- 4	TENT TO THE
-		:		· .	X	•	₹.	+	. •		•	<u> </u>	Ē	.	T* *	
1				. 1	157	* *	•	•		+.	•	ALU P	• # # # # # # # # # # # # # # # # # # #		*	F. m . E. M.
A 12		÷ • • • • • • • • • • • • • • • • • • •		• • • •	1				•		•	To min to	enter of			Wande Ivente
新年の100mmである。 100mmでののである。 100mmである。 100mmである。 100mmである。 100mmである。 100mmである。 100mmでの	11	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				•	*		:	•		. 0.70	**. .*	*		And The Contract of the Contra

America commerce facility used

New remeate in 1967 and and why Alf requiremental Links of above wrated be most with the encountries of the first for the first one contribute and 206-300 in the Links of the first of the

The second secon

Parparentanes and many many transfer of the Company

CHEROLOGICAL SERVENCIA SER

2 8 8

REPINED AND 4 ST

ONE LANKA PAKAI	METERS MOW IN	QUESTION FOR	THE TENTATI	ONE ! ANEA! PANAMETERS NOW IN QUESTION FOR THE TENTATIVETY PROPOSED DATA HIGH SYSTEM	
Parat. etc.	Охидев	Total	- 1 A	far wave	And the second s
	,	redistion out		apectrum	
Get location		7		Skine is page !	T
Vertical layer	Ste to 10 mm	Ŋ		37	
Pang	0.00	0 to 2 ly and 6 to 100% Not stated	₹.001 01 0	0% Not stated	
Manual Server	7	1			

Paret att					Car wave			The same of the sa	<u> </u>			
		e all free	redistion out	Y TO	Spectrum							
Get location	¥.	Same as page	~				T	-				
Varifical lause	-	3			<u></u>							
		EE 07 07 300 5	Ŋ 		•					-		
į	 	1 (ca)	0.02 15.00	9 to 1003	Not stated							
Manual Strot	error	£	No.		-						-	
Deratica of ch	5	20 min avg								•		
	,						The state of the s	-				
	Y	A. T 300/20 n mi			•							
A Line of the last	2	SAPBO INE	N/A		•							
	į	6 hrs									-	
1	×	10 min				*****						•
	2	alar i	¥/;									
Remarks												

	JOY SYSTE	
	4	
	9	
	3	
	VELY	
	7	
1	21 24	-
Q CA		
10 4 45		
0.0		
TATE		
1 5- YE		ĺ
EYOND THE S-YE STATE OF 1 JF AST BOD THE TRUE		
D BEYO		
DEREL		1
COM		
ELER		
PARAN		
•	1	

Parameter		Sensible boat flux	Parameter Sensible Water vapor Reynolds Eddy flux beat flux flux stress of best	Reyroids	Eddy flux							-	
Geo. Incerting	8	Same as page !	1		•	 -	Ţ.		7				
Vertical layer	yer) B C		Ī	Mc to 1000 in				-	-	:	L	
Range		0 to 1 ty/m	0 to t ly/m	0 to 30 Sines/cm ²	0 to 4 ly/m					-		:	
Martmun error	Tron	Not stated				+							
Deradion of ob.	8	20 min evg.			*						-		
	Х	Х. Ү 300/20 а. ты			•	-				:	-	÷	
Sampling interestly	F)	K/X			LA PSO IVIA	-		-				- +	
	Time	c bre									-		
4	X.Y	10 mi					-						
	rs	V/N		•	oju.	· · · · · · · · · · · · · · · · · · ·					; —		
			T		4				_			:	

ASSESSMENT SHEET FOR REPINED DATA REQ INFINENTS

/	Para cantorre					0	OCEANOGRAPHIC	4 PKTC								Σ	FTFORC	METFORGINAGIA			
/	10	Curr. Curr.		1	Sound	Water	Water W press Ansbient Ambient Trans	Amsbient	Ambient	Trens	Wave red	Wave meeaurementa.	<u>۔۔۔</u>	<u>۲</u>	Air Atmos Vence	Verne	Den Inn	lunu.	Press Wind William	<u>8</u>	3
Characteristics		AT.	¥	A I I	abeac	A TAO	(capper)	lighi	notes parency	perency	¥	Per Or		Ē	elevi urras		E	Gritin)	4.00	117	1.000.
Geographic Isontion		Deep Open	N.0%) 41	to 60°5 N	America.	n Const	Deep Conta (\$0.1 to \$0.5) N. American Coast out to 100 n mi	TI.					**** ***								
Vertical laver		Starface to 5000 in depth	5000 th	604							Surface	:			•	T. Day	The variation	log of buoy mant to numbers	ķ		
RANGE (5-91 COA)		3 to 0.05 to 0 to 360° 10 total	0.65 to	35	55 GO to	to -5 to	0 to 10"	0 to 2.0 -80 to by/on 20 ob		0 to 7016/m	0 to 1 1.1.160 ft 160 sec	1 L. 1	8 i.	0.50 25.40 0.40 380° 60°C 10 ky	<u> </u>	Hills mis	01.01	Harto to to to to to to to to to to to to t	045 315 050 350 600 040 80040 5540 0610 512 140 010 110 110 110 110 110 110 110 110	<u>.</u>	e te. insuate
Max error (\$-91 80A)	3		0.03 kts	0.03 lids 0.03 0/00 or 1%	<u>A</u>	\$1 0 01.C 0 1%	0 Id	1.5	3.0	52	0.2 ft 0.1 Met.	0.2 fg 0.1 mer 5 - 0.1 ec 0.1 kg 0.1 mb 0.2 ec 13 or 108 or 13		· <u>· · · · · · · · · · · · · · · · · · </u>	- AN 10	\$ + -	· · · · · · · · · · · · · · · · · · ·		THE DE	±.	‡ ::
Deration of ob.	-	15 to 15	Pert pert	hast, or Short perford avg. (Represen	apresentative	Ê					!	:	·	•	•		,				
	X,Y	s 606 a. my 100-150 a. mi	100	150 a. mt					:												
Salar Marie	2	7 . Dec 5	PRO Jeve	20 Sed. IA PRG levels (+ 36%r bottom	bottom)			slevels			Suring										
	Time 6 brack bre	No.	r																		
Ob. synch. X.Y. (2) 10 auts, (1 auts)	Y. 20. 1	0 mtbs, (1	1 magan;																		

*brindes Measurements of Swells

1. REFINED AND 4 58 REQUIREMENTS INSF. Woods Hole-Study Dynamic Process of the Western North Atlantic

Obographic le	ocettos	20 * N to	40°N, 45	5 * TV to 75 * T M	· Moorter of	odd()	Occurable location 20+ N to 40+N, 45+W to 75+R + Moorings of Opportunity Anywhere in World Presns	plucific (Peans	,		•	
Vertical layer	er	Sec to			3¥c	Sfe to S	Sfc to					ن
		5000 2			200	5000 m 5000 m	900 m			-		
Range		о 3	3	3	-2 t	-2 to	0 to		- 10 to		-	
		.080	ا ۾	38 0	30.		(20 ps)		J.98	105.0 153		3400.
Maximum error	rest	10.	.† 	C - Kte 0.03 0,000	3 01	0 0110	Ç.					<u> </u>
Deration of ob	8	2-1/	2-1/2 min	1	30	30 98	ingt			• •	•	
			276.						# E			and the
	X.Y	6 n. m1	6 n. mi in Oulf Stream	Arean	_				1	1012		
		20 n.m	20 n. mi outside Stream	Stream	!	-			1111	1911 0		n 1 ma 1 ma
Samp 18.	2	TAPSO	IVIS OF IE	LAPSO Ivis of in some areas	-							
Inter et sy		Should	be Gexub	Should be flexible for others	 	-			:			
	ال 1	<u>ئ</u> ة 			1 br		l hr		1 br	: hr) he ibe
5	×	10 mdn			101	10 min	10 mtn		16 mir	· · · · · · · · · · · · · · · · · · ·		than the annual to
:	2	1 min			6	uşu	i toin		· · ·			

HESULTS OF ABBESSHERT

Requirements fully met:

Requirements partially met and why—All listed requirements would no met with the exception of

• The X, Y secting of 8 and 20 a.mi: Tentative "system" specing is much growner 5005 100 n.m.

• The time sampling intensity of 1 br: Tentative "system" sampling as every 5 brs (DO) and 3 brs (CNA).

Bequirements not met and why

1 TENT - SVELY PROPOSED NDBS SENSING CAPABILITIES	LY PROP	ORED NE	DEN SENSE	NG CAPAR	TILLES														£	Reviewed 20 Aug 168	AME FR
i R	Parametra					0	OCEANOGRAPHIC	PHIC					-			Σ	TEORG	METFOROLOGICAL			
/		1	Curr	State S	Sound	Water	Water W press Ambient An, bient Trana-	Ambient	An. bient	Trans.	Weve m	Wave measurements. Air Atmos Atmos		4114	1 month		The Inni-	- ing	2 X	Presity Wind Wind	56.13
Characters of other	80	<u>a</u> r.	pegde]	poeds	2 E	(depth)	ligthí	not se	parency	Ħ	Per Tar	J. Lik.	o. E	elect		pount tation	Tago an	i i	į	Ţ
Geographie London		O de O	N-091 EME	Deep Ocean 160.N to 60.Sy M American (met out to 466 n mi	America	u art g	at to 466 n	Ē)		:						1
Vertical layer	100	Burtace	Surface to Sees as depth	deyda						-	Survive.	;	-	;		T'18, 18	hora	True of home and to surface	÷ ; š		
Name (5-yr BOA)	. BOA ;	3	3.05 to 0 to	o to	4.06 %	-5 to	0 to 104 0 to 2 0 -80 to	0 to 2 0	-80 to	010	910	1 10	2 2	u	ءَ	100 to	15 to	3 = 0	0 to 1 to 6 to 2 to 6 to 800 to 25 to 6 11 to 7 7	-	
		N	10 110	420/00	5806 fps 40.C	J.01	p#1	ly/sa	-20 P	70%/181	3 00 -	300 17	0.0		ž:	Title 560	J.07	100 ft 46 age 260 60 10 kg 1099 mb 40 (2 1 ly m	e e	· •	16.1 kts
Max error		'n	0.03 lits	0.03 lds 0.01 0/00	<u>a</u>	J.10)	6 13	2.2	3 6	ĸ	0.2 %	0.2 ft 0 : wee 5.		<u> </u>	01 kV	01*C 01%v 01mb 0.25C 13	<u>-</u> ن کو کر ت			:	\$
(\$-51 BOA)			*				1				or 10% or 1%	97 J.J.							£ :		÷
Deration of ob	8	7	Port Per	hast, or Short period avg. (Represent	TOT Secure	m(Jac)							-								
	X. ¥	% 5 0	\$ 600 p. me/100-150 a. md	-150 a. md									-			i					
The state of the s	2	20 Sed.	LA PBO lew	20 Std. LAPEO levels (* near bottom)	bottom)			2 tevels			Surface		_								
	Ŀ	un yhan s	-										_								
Ob eyrach. X.Y. (2 10 mits, (1 mits)	X.Y. (2	10 =	, (1 mtn)									- 1									

*lackades Measurements of Swells

2 REPURDAN	1O • 29	E CC	SMENTS	NSF. Und	ereity of	2 REPINED ANO # 59 REQUIREMENTS NSF, University of Washington-Shidwof Effluent Waters of the Countries River	atters of the Countile River			
Geographic location	Catton	Month	* the Co	Mouth of the Columbia River to	ar to 600 n	600 n. mi W. 300 n. m. Sand 200 n mi N	N. Cu			
Vertical layer	1	Me to				Stc to				
		50 m				50 m		-		
Reagn		9 5	3 1	2 5		31		-		
	1	2	- 1	8					-	
Marizens error	<u>B</u>	5	0.5 lits	0.5 kts 0.5 c,		0.92°C				
Duration of it	49	10 min				19 min			•	
	×	25 e. ma				25 p. m.		† † † † † † † † † † † † † † † † † † †		
Sampling interacty	2	0, 3, 6,	0, 3, 6, 9, 12, 15, 20, 25, 39, 40 · 50 m	. 20,					· · · · · · · · · · · · · · · · · · ·	
	₹ GEN	2 hrs		*	- 23-	2 hrs			• •	:
do great	¥, ¥	10 mdn				10 rota		-	* ·	!
	7	1 min				min				

RESULTS OF ASSESSMENT

Requirements fully met

All requirements listed to 2 above would be met with the exception of Tentative "system" has fulfal epacing of 300 n. mi in EC and 100—150 n. mi in CCA. Tentative "system" has only 5 levels in the first 50 m. | Requirements partially met and why | Al | The K, Y specing of 25 n. mi | To | The fine Z sampling intensity | T | The 2 hr time sampling intensity

Regarrements not met and why

Carygen: Uncertainty about oh from buoy unattended for long periods

Nutrivata, Stological Part, and Sediment lond - Considered beyond the Sevir buoy SOA

*These are 1967 data requirements not refined

1.45%

2

Perezaotar		Octygen		
Caso location	A	Mouth of the Colt	Month of the Columbia River to 600 mi W, 300 mi S, and 200 mi V	
Vertical layer	yar	Sec to 50 m		
44		M m e on e		
Martinum error	HTOL	0.06 m L/l		
Deretton of ot	18	10 miles		
	* *	2.5 n md		
Bear phine Lateratity	2	0, 3, 6, 9, 12, 15, 20, 25, 30, 40 · 50 m	20.	
	T	2 57		
S synch	×	10 min		

Parameter Nutriental Bealcocical Sectionent Coo location Vertical layer Storm August Unit Dereston of oth 10 reds X, Y, 25 a. red Parameter Nutriental Sections August Nutriental Sections Augus	8 8 ×	Matcriente pa Sanse au above Sanse au above Unit Lo So m Londa Lon	in meters	load load							
Bagggding interestity	2	0, 3, 4, 9, 12, 15, 20, 25, 30, 40 · 50 m	50 m						!		į.
	T.	2 hrs		*			-+-		1		- 1 - 1
Ob synds	λ×	10 min				+		+			

<u> </u>	Paners						OCEANO RAPHIC	APHIC								3	TEOROS	METEORO! CKACAL	Men	07 per	Revised 20 Aug 66
	/		Our	9a Linetty	3	Water	Water W pres	,	A zabient		Wave	Wave measurements*	*	Air	Atmos	Atmos	Dew Inso	- isal	Precio	Mind.	¥.
Characteristic		į				<u> </u>	(5 (5 (5)	Ē	not se	parency	£	a d	à	OF 18	- 100 t	88123	peag.	lativa		Į.	speed
Chargespide beseites			.09) ###O	Deep Opens (60"N to 60"Sy'H American	A merica	M Comman	Const out to 400 n m	1					 	-	-	4	1	-			
Vertical layer	ž	a transfer	Surface to Sees in depth	1 499						:	Surface				i	Toget		Total of brone mand to applicate			:
Marge (5-71 BOA)		9 0	0 to 0 05 to	0 to	45 00 to		-5 to 0 to 104	0 to 2 0 -50 to	-60 to	9 te	6 to	1 to 0 to	9 to	25 to 0 to	3 3	+ 4 1 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	25 to	43 TO 0	121 3	\$:	: 2
Max error (3-yr 80A)	. =	4	9 03 pt	0.01 0/00 1 100	å	0 01 %	6 13		•	7		0.25 0.1 age 5* 0.1°C 0.1 kv 6.1 mb	1 3	, <u>.</u>	<u>ئ</u> ق	Q Q	10.2 %	E 2	63 mb 6.2 m 10, fit 6.01 2-	8 :,	160 KV6
Dareston of on	8	1	Secret pay	hart. or Short period avg. (Representative)	Batanasa vega	Ē					4 14 34 14	- le	+	-					r r		10 10
	X,Y	250 4	130	5 600 n 100-150 n. m											1				1	i	1
	2	2	IA PBU les	20 3ed. IA PEU levels (+ zes. buttom)	buttom:		-	2 levels			Surface		-		1	-					-
	Ē	om your s						7					+				1	!		1	
Ch. syuch	Ob. syuch. X,Y, (2) 10 mile, (1 mile)	10 m	1								!		1				1		-		
	1			-																	

Direct Lyst Direct Lyst A. Y. Y. Yorkson Lyst A. Y. Y. Y. Y. Y. Y. Y. Y. Y. Y. Y. Y. Y.	Congruptite levation	- Post of															-	
X X X	Vertical is	ik		-							-	-	-			-		
	3					+	+				-+		-		-+-		-	
X, Y	Marx : means	P.L.			+-	+	-				- -			+	-	-	+	1
X X X	Duration o	£ 1			-		+-	-		+-	-				- †			į
¥. ✓		X, Y		:	+	-				-		- +		-	+	-		
<u>1</u> 1 → X. Y	Tampitag			-	+								+	- +		-	-	
Χ, τ		Ē			-	-	-	+		-	+	+	+	-				
	1	+	+	-	-	+-	+	-	1	-	+	†					+	
		, .	+-	+	+		+	+		+	-	1	+	-	***************************************	-	+	

RESULTS OF AMMERICATION Medicines and the section of the section o

Asquirements partially next and why-

Molecula set set and why
 Molecula Growth: Jedger better does by other seach as the buoy tenders taking ob from spe. all suspended surfaces on buoy sach time buoy is usited.
 Moleculas Collection: Considered beyond 5-yr buoy 8QA.

Ţ
SYSTE W
7
7
·-
0
x
7
7
٥
3
8
ž
ž,
э,
_
¥
TIVE
~
7
A THE FENT
Ë
₹
K
Ž.
-
3
ై
7
7
8
7.
REA" PARAMETER
-
PARAME
2
*
-
REA
₹,

		To the state of th			-	 						_
Parameter		growth				 						
Gev location		Not stated	A representative and the second secon	The second secon								
Vertical layer	¥	28 to 9:00 ft										
3. 1.		Not stated				 						
Martin error	rece	individual whole organisms										
Deration of ob-	8	Not stated:						-	!			
	×	10 a m										
	z	10, 200, 400, 600, - 900 ft										
	į	era es					· 	<u> </u>				
1	×	Not stated										
	2	of stated				L	-			-	-	

Penarta

Paramoter	Biologner			-					 		
	consection										
Capo locathon	Mot maked							i			
Vertical layer	Me to 900 ft				-						
Manage	Not stated									-	
Maximum er ror	Individual whole organisms	F CO 1	*** ** *******************************								
Dereston of ob-	Not stated										;
*	X Y 10 B. CD.						<u> </u>	!			
Paraghag 1710	1 006 · '009 2 '00 + '002 '01 2										
	Time 48 brs	*************************************				·			4		
×	X Y Not etated									1	
	2 Not stated	_					_				

Page 2

TENTATIVELY PROPORED NORS SERRING CAPABILITIES	TA PROP	OMED WE	NEW SEVERE	NG CAPABI	UTIES														Rev	Revised 20 tug 68	1 65 Au
<i>i</i>	P. C. Berri					5	OCEANOCRA PHIC	PHIC								1	FTFORC	METFOROLOGICAL			
/		Curr Curr.	Cerr.	1	9	¥ # #	Water W press Ambient Ambient Trans-	Ambient	Ambient	Trans	Wave me	Wave measurements*		A:r			Dee Inso-	- 0.50			Pul.M
Characteristics	/3	.	dir. speed		•	9	(dapth)	light	D 03 36	parency	ž	Per	'n	a E B	elact	bead	point later:	latri	r s	į	poeds
Cougraphs bentles		o de de	N-09) 8300	Deep Ocean (60°H to 60°E) American Coust out to 400 a mi	America	n Const on	it to 400 n	1					H								
Vertical layer	Ě	and a	Serface to 5000 m dopth	depth							Surface		 -			Topo	f buoy m	Top of buoy mast to surface	: ave	•	
(Avr 10A)	õ	9	8 3	9	65 60 50	5 10 10 10		0.10.20 19010		010	.) to	1 to 0 to 25 to 0 to	o to	25 to		NOC 10	25 to	3	25 to 0 til to 0-12 i to	9	21 0
	- 	ž	, or or	420, 80	_	2.04		6 6		704/m	100 ft 40 sec 360* 60*C	40 Bec	390.			1.099 mb	J.0*	1099 mb 40*C 2 0 km		.09:	160 kts
in street			8 8	0.01 0/00	\$	\$1 0 0 1d	\$1.0		€	X.	- 2 F	0.2 ft 0.1 sec 5.	• • • •	0 1•0	0.15	Ê	1.1 3.7 0	1,1	10.0	:,	: 5 kts
(S.yr BCA)			¥ 8	•			-				or 11# or 19	61 13	_				***		ם		, L
Danies of the	1	8	and more	last, or Stort paried avg. (Repressuit	present t	(See)										'				:	!
	X. Y	989 4	5 600 to may 100- 150 to ma	150 p. m.																	
No.	7	2	IA PRO IOT	29 Bed, IA PBO levels (* Amer by dom)	br ctom)			2 2 2			Series Series										
	ŗ	e kryf kra	5																		
Ob. symeth. X.Y. (2) 10 melm, (1 melm.	X.Y.@		Î																		

"Sectional Measurements of Swells

2. REPINED AMO # 46 REQUIREMENTS USEN.

Omegraphic besetten	- morphose	o Ho	Merchoo o	Oulf of Membeo out to 200 m Depths	n Despites									
Vertical layer	į	affe to bottom	E 0				Bottom 200 m	3fc	Sfc	Sfc		Sfc	7.	
		0.10	9 1 1	300	4300	8 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1/1000 to	6.25 to	0 to	5 5 5 5 5 5		0 to		1 to 100 kHz
Maximum error	Ē	5.	0.5	0.5 kts 9.1 °,00	å	0.15	O.1 in	9.25 %						3 kts
Denta a d	8	ž	Ä	iner or	3	1/16 mc	1/16 mc 30 min	36 mln	30 mtm	26 1 과 급			1 min 1 mis	1 min
	X.Y		1 a mm 1 a mm1	1200 A			30 0 100	16 E m		10		iui.	1 7	Ē
So mapitag Intersectin	2	£	8 2	H	E	8	V/Z	K/X	A'X					
	Ē	1 br	<u>;</u>	S magn	Ver	S miles	2 ** C	3 hrs	3 hr	3 hrs 3 hrs	+ - - - - - -		3 hrs . 3 brs	1 2
1	λ ×	2	4	, main	ě	1 meta	Sala	5 min	5 min	a min	• · · · · · · · · · · · · · · · · · · ·		uim ;	min
	2	S	5 mg	ind a	I mila	1	V/Z	V/X	< Z	A/N A		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		- 7

Requirements fally met.

Researcements partially most and why. All requirements used to 2 above would be met with the exception of a The 30 mais derestion of do. Tembative "system" is only up to 10 mm.

• The tan excelle X, Y specially manager "system" is stall special is about 100 m m (CNA).

• The tan excelled independ to a second to a second to a second to a more gross.

• The tans sempting independ to X synch of ob. Tembruse "system" but as a stringent.

Image remarks not next and why

The first section is an expected of the section o

Page 1

"These are 1967 data requirements not refined

PERSONAL INCINERY INCOMINGES REPRED AMO 4 65

				-				
Parameter		Terbiaty	STAC FOI		-			
	,		CANCELLANCE AND AND AND AND AND AND AND AND AND AND				7	1
Geo location:	ė	O.H of Mexic	God Mexico out to 2000 m dempts					!
Vertical layer	į	1						; ;
1		8 -	0 to 8				•••••	
		1990 Bara	m to the		*	-+	+	
MARKET OFFICE	101	en de c	¥ 27					
Parish a di	•	Pe 104	I SOL OF					
		2 990	And the second s				-	
	×	E 9061	1300 ti					:
ļ	7	7 24 007	-				:	
	į	3 87	2 48 27					
	×	e e					•	
	7	2 min	-		-			

3	ij
Ei.	ĺ
	i
b	ı
>	1
	ı
BED DATA BUOY SYST	ı
-	١
3	١
ã	ı
_	١
<	Į
۲	ı
4	1
9	j
\sim	ì
:::	1
2	í
-	-
Y	ł
8	7
×	ı
•	4
•	Į
>	١
-	ı
	ł
	Į
E	į
_	١
R THE TENTATIVELY PI	ļ
~	ı
-	1
~	ı
-	Į
ie.	!
\bar{x}	ì
Ξ.	ı
	1
×.	ı
£	1
٠.	1
	1
-	i
-	1
	3
*	Ì
Ě	-
THE	-
THE	-
THIE	-
THE	
THLE A . A	
THE P THE	
ATE F THE	
TATE ! F THE	
STATE F THE	
A STATE / F THE	
THE VETATE	1.00
THE VENTER OF THE	
S-YN BTATE / F THE	
SHIT A LATATE P. THE	
IR S-YN BTATE / F THE	
HE S-YN STATE / F THE	
THE S-YM STATE / P THE	
DIHE S-YN STATE / F THE	
MD THE S-YN STATE / F THE	
OMD THE S-YN STATE / F THE	
WHAD THE S-YN STATE / F THE	
EYCHD THE S-YN STATE / F THE	
BEYOND THE S-YN STATE / F THE	
BEYCHE THE S-YN STATE / F THE	
ID BEYOND THE S-YN STATE / F THE	
LEED BEYTOND THE S-YN STATE / F THE	
BARD BEYOND THE S-YN STATE / F THE	
MERKED BEYOND THE S-YN STATE / FTRE	
IDENED BEYOND THE S-YN STATE / FTHE	
MIDERALD BEYOND THE S-YN STATE / FTRE	
MEDICALD BEYOND THE S-YN STATE / FTRE	
I MONIDERED BEYOND THE S-YN STATE / FTRE	
CEMBED BRYOND THE S-YN STATE / FTRE	
BOY MENDER RED BEYOND THE S-YN STATE / FTREE	
NS CENSIDERED BEYOND THE S-YN STATE / FTRE	
ERS (* ASSEDERED BEYOND THE S-YN STATE / FTRE ART PYK	
TERSON MEDICAL BEYOND THE S-YN STATE / FTME.	
ETERS (1 ANDERED BEYOND THE S-YN STATE / FTME.	
METERS COMMIDMENTO BEYOND THE S-YN STATE / P THE	
AMETERS CHASTORNED BEYOND THE S-YN STATE / P THE	
RAMETERS (FASIDERED BEYOND THE S-YN STATE / FTRE	

Parameter											
(ke lerette	•		7				-	:		-commit	
Vertical layer	***					:			Processing	Services	
1									•		
Machine error											
Price 4	1		100 Para (100 Pa			***************************************					
:							-	Ĺ.	•	• • •	
							i		•		
	1	The same of the sa					i i			•	į
e e e	X				1	:			****	• •	

-: -:

ASP GSSSEPAT SHPET FOR REFINED DATA HEQUIRENSPAIN

																		£	Revised 20 4us 6h	49 404
t.L.			•		. C '	CK BANCE KAPHE			the state of the same of the s	1		-	1		ŝ	£	MET PORCEOURAL AT			
Characterisation	<u>.</u>	Land Carry	1]]	•	Make the press Americant Americant france Asso monacurements. The Atmiss Atmiss and the press that the press that the press the press that th	A material is	A militerat	Ambrant Ambiteret Trace	¥ ¥	Per [Ar	2 5	- T	# \\ # \\ # \\ # \\	Atmos Atmos ibes one-	ing the property of the contract of the contra		Free It. Wind Wind	W. Inci	4 2
Couprage Lands	i	40.	Dem Chem A0-X to 46-X/T / Imprint Care and to 400 miles	A STATE AND A	CARS	1 to 400 n	117	***************************************		1		+	-		-	1				
Vortee bye	1	Art. 1 1 1 1 1 1 1 1 1	1							1							•			
Man (6.77 KM	3 \$	3	9	1 00 1	3	and being and book	5 g	3.0€ 0.00 0.00	3 8	·	1 to 1 to 1 to 1 to 1 to 1 to 1 to 1 to		t may be to the second of the	\$ 1			and the second s		į.	<u>:</u>
Man orygin	<u>.</u>			1	\$2.0°			•	, 5	£ -				: 	STATE OF THE STATE	· —	: -		•	160 703
Paragon of the	i	-	had or Beard period any Baproness	-	į		•				. - :	-		٠.,		•	-1	4		
×	•	· · · · · · · · · · · · · · · · · · ·	130 .																	
]	Š		M St. LA PMC) Lorente (* man r humblem.	1	:		2 bevela			2										
1	·	•					:					•								
(20 oyum X.7 (30 10 mm, // mm)	:	Î										-								

11		Within Majore Chrysent Areas Carte	A rees Catterich	1	Current Areas Nurthern Bernauskarre	# 10 mm				:
100 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1 mm 1	Vorticus Loyer					-	* }		-	•
105 or 2 miles (107 miles) 2 m	}	i s	**************************************	3		+				
The train of the control of the cont			•	Ä		10 M 20 mmc		٠.		
200 300 300 300 000 000 000 000 000 000		0	•			2 4 2				
NAME OF THE PARTY	* -			j		25 min	Indi			•
The state of the s	•	2/*	- F	2	•	• 6	·			
The first control of the control of		∀ / *	*		• ·	TE	Ē	-		Ē
Seminar Statement of the seminar of	1	24	* · · · *	e de la composition della composition della comp	•	e e e e e e e e e e e e e e e e e e e	Zing e			
		22		36 M4	• •	t turn of	. t.	•) 40 (2) * SOUT (2) *		

RESULTS OF AMERICAN

Response mentally ment and style and action to be added as most with the exception of a linear transfer of books on and estimate and presented and per centrements and other centrements and other or and action of the centrements and other or and action of the contraction of the c

"Thines are 184" respiteraments and refrance

						PARTY STREET	A TOTAL OF THE T				:	-			¥	7 1 1 1 1 H	METPOROFORM	1		
		}	•		i	The state of the s	A months	A methodological			27.00.00.00.00.00.00.00.00.00.00.00.00.00		_	¥ (E) Y	Atmin	*		Free ip Wind	1 3	, in
City promo 11 office	ì		Pa State of			Į.	ingled near the satement Hr	nes 🗪	(Atremery	ž	Fer IAr	13.	À .	3 5	eles I prima	postos interes	istorii.	1.814	-	(4
Langraphia London		X. E	7 25 4 20 111	A mee "		from these dark to tordy A American Const and to tor a re-	Ĺ													
Yorken) layer	į	Parlace is held in Conf.	1							TI					- -	C Part B	Trap. of human mares to surface			
Mange (5 77 M.M.	3 :	3 5 5		3 8 3	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		8 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	5 = [* ∧	. E		2 k	2 1 1		ـــــــــــــــــــــــــــــــــــــ	T T	Ĩ.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	# 19	پُو	· · · · · · · · · · · · · · · · · · ·
10 miles	:		\$	1	\$ 6 51 × 1 1 1		· *	ě.	· ·	= =	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		# 7 · · · · · · · · · · · · · · · · · ·	<u>.</u>	÷		<u>.</u>	2 3	<u>.</u>	7 .
Inches A &	1	that at their particulary (Newports	Tank ave land		· .	•							*	-		-	•			
*	4 \$1900	4 6000 am/100 110 am	110 .							_										
		No man (A 1954) como to Es cama y boats of tarred to ta	1 3	Name of			2 2			Perter										
												-								

angraphs profite	Angraphic incades. Wilden Malue Carrest Arman helands Ma	deside Major Carrenal Areas Northwest Sean Johnson	Youthern Hemilophers	e.				1		
Vertical aper	- ·		.	• · · · · · · · · · · · · · · · · · · ·			-	-		
	1000000000000000000000000000000000000				•			• •	•	
Masimum or red	100 0 1 124 0 0 2 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	起る。	•		•					
de de menteral	A stall a small last	(and)								
H	200	The second secon	•	•		· ·			• •	
7	1 01 10 E	£ 77							•	
i i	5	* 1 W B 1. W	-		•					
4 4 4 4 4 1	10 mak 10 make 10 make	Mary Company of the C	•				•			•
N	2 metes 3 mess 2 meta	a transfer of treater		-						

Requests manufes fully ment

* The X, Y spaces of 50.80 s. ma said 50.40 s. ma within spaces before the contract of beautiful to the contract of the contra

Perpet remember and meet and why

"These are 1967 data requirementes, son refload

ASSESSED AND AND A DESIGNATION DATE A REQUIREMENTAL

				9 2 1 7 7													Ē	Antimo 20 Aug 168	A See
in the second					. •	K & AMCKARAPPITC	COLLAR POPULIC					:			* 1 * . fet.	MAP 17 - Rest : Nade A	1		•
Character stelland	÷ •	- 12 Carre	j] [11		- Authorities	A metalogical	Trans	. £	Managed Application Application And the recent of the form of the form that	È	A traine	Atmos Atmos	Daw Ina-	India.	Aktivate Alterona Enemy State Streets and and altern trade the text	1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Charge update beauties	I		Dies Chass (80''' to an' by	4 T		C	-		ودوية	•		+	8		1				
Vertical layer	ì		•							1				,					
Barge (A.yr Ribe)	: 1	1 1 ·	3 2	3 1		**************************************	5 2		-	3 9	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		3		4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	The state of the s	•		3 =
Man orrup O ye BCM.	<u>:</u>	3 .	- 23 th 0 21 th 25 th	1	7 19 0	*	<u> </u>	•				7.1.5	: :			₽** 4 }	2	:	54.06
Daniel of the	1		Mar of Mart protest and i Baper		į	•		→			 :					4	-		; ;
¥. ¥	3		1									-							
		14 24 Call 14	29 Mai. LA 2000 Lorenda (* maur hodeann)	Î			S. Service			Parters									
1	}	i Ş								•		•							
A THE STATE OF THE STATE OF	1	4										·							
				-		-		The second second				-							

10 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Stage Targette beautiful		Within Ma jor Current Arrias/Chilasoft	The Challes of the part arrests		PRESE MONTHE TO MENTINGER	PRESE MANUTARN PD 160 (1) INC. COLD FOR		:	-	1			•		1	
	Versional input	# B		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	11.26 75.1			•	-	•		1	_	_			
X 7 000 000 000 000 000 000 000 000 000	1	2	- S		Postario.	•	•-		- 14		•	•	•	- +		· · · · •	
X Y 600 000 000 000 000 000 000 000 000 0		b R	₹ ₹		4												
		<u>.</u>	50		ř.	•	•	•	·•	·		. •		•		•	
X 7 600	Design 4 4	1			· ·	•		. •	+	 -	•			•	·		
	*	0		8	ŝ	**	•	•		•	٠	•		•	•	٠	
Time three 13 km 12 km 1		ž			21.X		• .						•		•		
2 5 mag			A best of high			•	•	•	•			+	•	•	•	٠	
78 1				20 000	26 write	·*	•		+	•	•		•	•		~	
	2			9, 9,	W W	• • • •	•			•	•	•	•	•	•		

Bergette amenda fally mark

heapstroments and said nor why

requirements are reduced These are its

1	Parameter x						CKEANOGRAPHIC	PHIC								Ē	TECHO	METEOROLOKACAL			
/		1	L		- Property	4	Auter W Ambient Ambient Trans.	Ambient	1 mbien	Trans	¥.ave m	Wave measurements.		7 314	Atm.	Atmos.	Des Indo	15,40	Pyecup	_	pu s
Characteristics	100	į	, p. 64	F linit	¥	a a	temp septh light	7.67	norre	parency	ï	Per	<u>د</u>	de: S	rlec:	n seed of	protei	lathon	2762		The speed
Geographic location Leep Grean (6)*N to 611*SVN Americ	ocad on	0.00	(61)**	Sans of	4 America	in Court	as Const out to 400 mm	Ē						:							
vertical tayer	Ţ.	Surface	Surface to 5000 m depth) depth						:	9.11acr					Tox of	that my man	Tox of bully make to surface	face		
Rar Syr SOA	SOA:	31 0	oto ordero oto	ă,	01 00 CF	to to to to	- to 104	ato, p. 300 to	1 600	0.10	60 to	0 to 25 to 0 to 25 to 0 to 100 ft 4ec 360* 50*C 10 kv	960* 50°C	25 to 10		og inh	D .0\$	800 to 25 to a 01 to 1099 and 40*C 2 33y a	300 to 25 to 6 of 1 o 12 of 30 of 0 10 10 099 mb 40°C 2 3 by c in, hr 360° 1600	0.12 0.46 o.60 m. hr (360° 160 kts	7 te 160 kt
Zev French	!	· .		0 63 lts 0 01 0 00 1 fps	S.	- Je for :-	5		ŧ		1, 2 (\$	0.2 (\$ 0.1 sec).	<u>-</u>	÷ ;	- X	01 kv 0 1 mb 0.2% 13		1.3	9,01	÷,	
CAT SOA			or 13	3							34 104	or 10% or 17							=		:
Nurston of ob	30	Inst or	Short per	inst or Short period avg. (Representa-		ave															
	T x Y	+ 60k. r	100	. 60- n mallon-150 n mi						1				:		:		-			
Semplang	2	20 Sed.	IA P80 'cs	20 Std. IA PSC tereis i near textons:	teoffor:			2 levels			Sertect	:	+					;	i	:	
	ž	. brack bre	a Pra					!				:				:		:		:	•
to avence X Y (A) to min () muta	X	1 E 2	- Tratta																		

** The ludes Measurements of Swells

IV -115

2. BEFINED AMO € 78. REQUIREMENTS ORL, Penn St.-Large-scale Factors Mie ting Transmission of Underwater Saund

Name	2 2	\$500 to -		_	. 70		26.30	_								
September Sept	8 5		-				_	5	+	Ī	loand	Sie 10 and	340	S.C.	The and the end	14. 3
36.07 9.00 36.07 10.038 30.01 19 30.07 10 30.07	8 2		-		13C Tet	5.00 B	E 2005	-+	-	-	1 0.7 1 0.7	=	÷		: ::	=
	R 8	20		o to	0 16 2.0 -80 to		- te	3 - - - 2	3	91 9	-25 to	408 to 25 to		27 · 3	1 1 1	: :
103 rts or 19 104 of 25			¥ (#	ind par	E/Å	e	#()(1	100 ft 46 mec		8. F	0.09 0.09	704 day 6601	+	Z Olly on the min		9 1 1
(8) (8) (8) (8) (8) (8) (8) (8) (8) (8)	- - !		7	**		€	X ,	0.2 % 0.1 sec.	1 88C	•,		c.1 mb, e.2*C	<u> </u>	10 to 11 to 12 to		ል ቋ ት.
X.Y	+	++	- +					ž	1	Ŧ	lnst	I Inst	†	- HILD	•	•
-	+	- 1					i		:	-	-	900.	-	:	:	
		-	4			-		<u> </u>	:	1	Ŧ		- - - - - - -		†: :	†
X SO LA LA LA LA LA LA LA LA LA LA LA LA LA								- ∔	•		- •	e = .				
OC. Y				7	alai c			3,6		1	.	34c 10 3	388	Str	1 11 11	10 (1
William Co.	•	+			•	+		-		-			•		•	:
Tyme 6 brs	+		+		:					1	†	5 hrs			• •	†
X.Y	-	+ +	•			• •			-+	+	1	10 min	: .			1:
	+-	†	•	!]		-	1			-	C.I.E.	N. 4 1 min	*	· 2	unu 1	תויוה :
I Dute	Н	H					-	-	4	-			1			

RESULTS OF ASSESSMENT

Requirements fully met

Requirements partially met and why.—All requirements listed in 2 above would be met with the exception of • The N, Y spacing of 300 n, mi in DO —Terthiuse "asslem" spacing is about 600 n, m.

Requirements but met and why

Pictures of Bortom and Propagation Loss Judged hetter done by other means

Lee Accumulation and Density Threstainty about on form ND15 type busy

Bostom Type: Considered beyond 5-yr busy SO3

: Cred

REFINED AMO # 76 REQUIREMENTS Continued

UNE I ARE	L. P. F. P. C.	METERS NOW IN	UNE I ARCA PARAMETERS NOW IN QUESTION FOR THE		IVELY PROPOSE	TENTATIVELY PROPOSED DATA IN CLUSYSTEM				2	Neview of Aus As	¥
Pavameter		Propag. losa	Propag. losa Bottom photos	ice accum.	Water denaity							
Geo loration	8	World oceans			***************************************		-1					
Vertical layer	/e:	Not stated	Bottom	3 K C	Not stated							
Kung		Not stated							:	:		
Machine error	77.01	Not stated			4							
Duracion of ob	8	Not stated					Water Control of the					
	χ. ¥	300 п. ш.			•				-			
Sampling intensity	2	Not stated	4/2	N/A	Not etaled				:			
	Time	6 hr.									:	
Ob. evace	×	10 min	N/A	10 2512	16 min							
	2	1 min	N/A	V /R	- 18 L			+	-	1		
								_				_

PAINAMELE	. KS C::38	DERED BEYON	PAIRWALLERS CHARIDERED BEYOND THE 5-YR STATE OF THE ART FOR THE TENTATIVELY PROPURED DATA BUCK SYSTEM	S OF THE ARI	T PYOR THE TE	NTATIVELY P	ROPURED DAT	A BUCK SYSTEI	•			
Farameter		Bottom type							ļ			
Geo location	£	World or eans						-		-	: 	
Vertical layer	rer	Botton							-			
Renge		Not etated										
datimum error	FFOF	Not stated							:	:		-
Duration of ob-	8	Not grated					-					
	ъ Ж	Х У 300 в. ті				1				-		
Sampling intenetity	ž	¥ ×										:
_							_		_		_	_

TENTATIVELY PROPOSED YDES SERSES CAPASSILTIES	LY PROP	OBED 141	NEW SECTION	MY CYBYR	21L7														E.	Havines 20 Aug 61	10
.	Para metors					đ	CKEANOGRAPHIC	1PHIC								Z	ETEORC	METEOROLOGICAL			
/		Curr Curr	5	-	- Page 3	1018	S press	W press Amtient Authort Trans-	Ambient	Trans-		BABUTTONE		AIR	Atma	Atmos	3 A C		Precip	₽ 3	Wind
Claracteristos	/9	÷				Î	· dages»	light	not se	parency		Ht. Por Dir tomp elact press.	J.C	фш e	e ica i	press	potnt	lation	rate	Ę	peuch
Seographic location Deep Open (60°N to 60°S) American Count out to 400 m m	ocatica	3	COS: (60")	\$ 5.09 or x	4 America	CORES OF	# to 400 E	ş										i			
Vertical layer	i i	Serface	Seriece to 5600 m depth	a depote							Surface					7.00 T	twoy m.	Top of buoy mast to surface	٤		
Range (5-yr 30A)	30k	3	c1 (2 01 9) (2	910	4500 to	.5 to	G Boo 1:3			0.0	910	2	o to	25 to	3	860 to	S	0ts 1 to 0 to -25 to 0 to 860 to -25 to 7 01 to 0-12		9	o to
		.09	3	16 kts 420.00	58 00 tps	7.0+C	380	ų	-30 6	70%/m	1 00 1	N 01 D-090 - 090 - 2 80 0+ 12 007		20.05	ان ان	960 I	ر ده	1099 mb 40.c 2013/m	in./ hr	0.00	150 A18
Mar error		۶٠	6 03 kts	6 03 kts 0.01 6 m 1 fps	- A	0 01 °C	0 17	1	e e	Z	02 16	0 1 36.	. .) 1.C	01 kv	0.2 fs 0.1 sec 5* 0.1°C 01 hv 0.1 mb 0.2°C 13	024	13	10%	2.	o skt
(5 47 80A)			or 13								or 104 or 19	0r 19							in. hr		1, 10
Duration of ch	8	last. Or	Sort pe	last. or Short perind avg. (Represent	spresentative:	Ë															
	X.Y	4 600 h	100	≤ 600 h. may 100-150 h. and																	
Semoling	2	20 340	IA FISC ies	20 Sad. LA FSO levels (· near bottom	bottoen)			2 levels			Burtace										
	Ame	Time 6 bray bu-	S br.										-								
Ob. synch. X.Y. (2) 10 min, (1 min)	X.Y. (2)	10 min	(campa ;) .										_								

								, 												-
Geographic location	location		Oceans	World Oceans-Selected Areas	ž															
Vertical layer	į	34						Sfc	Stc to	Ste to				10 and		10 and			10 and 10 a.d	0.8.0
		5000 m						lac - ref 5000 m	5000 m	5000 m	310		2	20 ft	316	20 8	2	U.W.	20 14	20 13
Range		ن 5	o 23	0.00	4500 to -5 to		0.00	0 to 2.0 -80 to	-80 to	010	o to	 (2)	6 to -25 to	25 to	9.0 to	.	25 to 10. 10.	51 63	5	3
		360	5 Kts	00° 2*				th/th	-20 db	10 9 8	100 ft 40 sec		360	.09	10:19 inb 40°C		2.0 ly/m la./hr	ta.Ar	000	60 MB
Maximum error	errox.	2.	35 To	0.01 %		0.01 °C 0.17	9,17	13	3.dh	23	6.2 ft 0.1 sec or 10ft or 19	6.2 ft 9.1 sec	:	0.1°C	6.1 mb 0.2°C		\$1	0.01 In.∕hr	ř.	0 5 kg
Duration of ob	8	inet									A V G		Š							
													-	1	:				-	
	X.Y	5.5 n mugm13	ध इस्ते																-	
		buoys											_						- -	
Jundu s	-,	29 .000	,e;					2 1010	2 1018	2 or 3	4/2			8	2	T	1/2			4 0
(Transport)		C Seer	c seer spacing near top	ear top					1	lyls			-	 2 2	·	=	ž.	·	=======================================	
	<u>6</u>	l min						İ					+	Ŧ	l ruta					
6 8 8 8	×	i		++-								+	\vdash	+	l Edn					
	2	l resun						N/A	1 malin	1 min N/A 1 min	∀ /×	l min	+	Ŧ	1/2	1 min	Y/X	V/4	1 min 1 min	nin.
RESULTS OF ASSESSMENT	OF ASSES	BACKT																		

Requirements fully met:

Requirements partially met and why All bisted requirements would be met with the exception of P. Taratius of S.S. n. mi: Tentative "system" spacing is about \$0.0/100 n. mi. one location might coincide.

The limit frequency of ob: Tentative "system" values are \$/3 hr.

The limit X, Y synch. of ob: Tentative "system" X, Y synch. is 16 rous.

Requirements not met and why

<i>e</i>	Para meters					0	OCEANOCRAPHIC	PHIC								×	ETEORC	METEORCLOGICAL		,	
		Curr. Curr.	Carr.		Bowerd	Wess	Weser W press Anthonic Ambient Trans-	Americant	Ambient	Traza-	Wawe IS	Wave measurements.		Air	Atmos	Atmos Atmos Erry Inso.	18 A	- cent		Mind	Wind
Charrodornation	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ð	, d		P	Î.	(dapth)	light.	RG/ye	parency	F.	ž	J.C	90.00	okezit.	press	potat	391.0E	rate	er.	D.
Coographic Isomicae			N-09) SERVI	Diesp Opens (40"N to 60"5yN. Assertedae	i Assertes	Comme a	Consist out to 400 n and	a													
Vertical layer	į	Berfes	Sertion to See in depth	depth							Surface					Teba	buoy E.	Top of buoy cast to sarface	8.4		
Rames (Syr BOA)	P. P.	010	010 0.06 to	93	42.00 to	s to	-5 to 10 to 10 0 to 20 - 18 to -	0 20 010	of 5#	33	S	1 to 0 to -25 to	c 5		0 0	800 to	-25 to	800 to -25 to 6.01 to 0-12	0-12	0 to	6 8
		Ä	10 15	42 5/00	3 3	J-01	2	4/A	-20 \$	70%/m	- - - - -	40 mc	360. 60.C		2 23	1059 rath	2.04	40°C 2 0 3y/m		360.	150 xts
Max error		:	0.05 kts	0.01 0/cm 1 mm	8	0 01 °C 0 19	A 19	9 .	€ 6	25	0 2 3	0.1 300 5.	5	0.1.0	.01 kg	0.3 :16	0.200 19	<u></u>	0.01		0.5 ktc
(5 gr 80A)	_		\$ ~	3							OF 10% OF 1%	₽. 18							in., br		₩. 10
Durestice of ob.	8	1	-	hast, or Short period any. (Naprocessivity	ST.Consector	ê															
	X,Y	\$ 60 *	5 600 N. LEAN 790-150 a. mi	150 a. mf									-								
A STATE OF	2	20 Oct	IA PEO Jen	20 Sed. 1A FBO tevels (+ near bestous)	(Bastions)			2 levels			Burfass										
	F	III Share	1																		
Ob synch. X.Y. (2) 10 min. (1 min.	×		1																		

Geographic location	bocation	Pass C.	D best to an	East Coast and Cartifican In	A S with S	at 5 with World-Wide Later of			
Vertical layer	Ŀĸ	Bottom	Š		Ħ	lott. to	Bott. mar	Bott. Exaud	
			310 m)		17	6 m abre	310 82	316 19	
Reado		33	9	300	٦	20	0.8 04 0	0,0	
		5	2	,8 R	=		B / A	70%/B	
Meximum error	PT-T-GE	10*	0.1	0.1 km 0.1 0,00	9_	0.0170	138	*	
Derution of ob-	8	1 min			-	1 mda	1 min	then !	
	X.X	X d		1		K	Z 2	18	
Serpense:	,	Dog Co				5.3.5.	Bottom	Bottom	-
(meand by		F			∞ ₹	8 9 7 8 E	A) ac	25	
	Ē	30 mts	LL			30 min	30 min	30 min	
6	ж. т	N/R			Ī	M/R	N/R	N/R	
<u>``</u>	2	Y/W		•		l mía	N/A	N/A	
3 RESULTS OF ASSESSMENT	OF ASSER	BICENT							

Sequirements fol y mot:

Regule menta partially not and why All requirement i listed in 2 above would be most with the exception of a The 30-min trequency of ob: Teninitive "system" values are 6 hr DO/3 hr CNA.

• The 2 as mpking insecuting for water temperature: Tondative "system" special is more gross (1 level).

Requirements and most and why:

• Oxygen, p.H., and Turbality: Uncertainty about ob. from NDBS type buoy:

• EH: Constdered beyond 5-yr buoy 90A.

REFINED AND \$ 79 SEQUIREMENTS (COSTING)

										5	NEVIDED ON AUG. 50
Paradoeter		Oxygen	Turbidity	Hd		_				_	
Geo location	8	East Count and Caribban	d Caribbons	4							
Vertical layer	yer	Bottom only									
1		0 to 9 ml/i	Design No.	\$ to 8 pH unite							
Madeses orror	иток	9.2 mi/]	Not stated	0.2 pff units							
Densition of ab.	8	i a									
	Х, Ф	1 pt only									
Sea of the season of the seaso	N	Bostons cealty									
	į	30 min									
Co. sysch.	×	#/X					-				
	2	N/A		•			-				
					The state of the s			7			

Parameter		кн							-			
Gec lecation	9	East Court and Caribbean	d Carthbren		-							_
Vertical layer	iye.	Bottom caly						-				
Parage		Not stated									-	<u> </u>
Maximum error	er ros	0.3 milliroite				-						-
Durados of ob.	8	alan I									-	
	,	1 P								-		
Sampling interestity	2	Bottom only										
	1	Time 30 min							-		+	
400	×	N/R				1		-				
*****	2	4 12			-		-		+		-	

TENTATIVELY PROPOSED NINS SENSING CAPABILITES	LY PROP	CHEED IN	AND DEPOSIT	MG CAPAB	MUTTES														Per	treed 20	Revised 30 Aug 'es
1	Paris materia						OCEANOGRAPHIC	PHIC					-			X	ETEORO	METEOROLOGICAL			
/		5	0		3	Water	Wester W press Ambient Ambient Truss-	A carbit entit	A subble set		Ware an	Wave meneurenceds.		Air	Atmos. Atmos.	Atmos.	_	Inco-	Precip		
Carreteria	/1		Ì		1		(qadaq)	la Che	DOI DO		ž	Š	i i	2	. Pact	prese	M Too	action	age.	ě	2
Congruptio beatiful	í	å	1	Down Opens (60'N to 60-8/H Assurbas	A Assertion		Const out to 400 n and	M													
Vertical layer	ř	Paris	Berfan to 5000 m dryd	474							Burface		_			Topo	bedy me	Top of beory meant to awritece			
MAN Gran SOA	SOA.	9 6	1 _	9	-	3 6	0 te 104	0.60 2.0 -80 to	ĺ		-		9 5			01 00 g	01 62	-25 to 0.01 to		9	0 00
		ì	10 10	430/80	83	٠ •	Ĭ	4,4	-20 db	70°6/EB	200	2	.00	_	A	7.04	,	BI / AC 2	1	į	-+
Max orrow		.5	2	1 to 10 to 1	J.	0 01.0	310	14	€	*	0.2 th		_	2.10	- N	1	0.8°C	*	9.0	:	0.5 kts
(STERON)	_		£ ,								36 m	9 14°							is./ br		, ac
Ourses & &	8	1	a Long	lies, or Short period avg. (Sepressuled		Ē															
	X. Y	8	3 600 n m/140-160 n	-150 a. and									_							1	
	2	1	THORY.	20 Std. 1A PBO levrals (* zenr hottom,	PUROW,			2 Jerosta			Derface										
	Ę	· A year	i																		
Q. 974. X.T. (B. 10 ab, (1 ab)	X.T.	=	Î										_								

Vertical layer Vert	REPORTO A	(1 + OM)	2. BEFORD AND 4 10 EEQUINEMENTS USH MAK.	A AM	Mr. The	Jan Man	RELY NOTION	1 George	Eng. Lab.—Menorure Normal Geomagnette Noise						
7 Z T T T T T T T T T T T T T T T T T T	Contraction !	South Car													
2 Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Vertical Is.	i di									 				
7 X X T T T X X X X X X X X X X X X X X	•														
7 X Y Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	Maria and	Tra													
χ.Υ π π χ.Υ Σ.Υ	Darsition of	8										 	-		
7 L X X X X X X X X X X X X X X X X X X			·												
The X.Y	Samples.						ļ +								
X. Y		F	ļ												
	1	†			-	-	-	<u> </u>							
		7	-		 	-	-	_	-						

MEPTINEED AMO 4 60

8 8 X X Z Z Z X X X X X X X X X X X X X	Party Bearing their	22			00 True 00 Post 20
Cont. Sect. Sect.		Tala freq. beads			
10 to 20 to		franch water with	telumetry distance of land		
8 8 X X X X X X X X X X X X X X X X X X					
# # X Y Thee T X X X X X X X X X X X X X X X X X X					
8 X X Z Z X X X X X X X X X X X X X X X					
7 Z Tue					
Z The X X X		י פעונים			
Tues	2				
X, Y					
,	χ. Υ				
	A.N. 2				

DELICHED DELICHED OF THE STATE OF THE TRATATIVELY PROPOSED DATA BUOT STOLK	147	THE STATE OF THE S
	Parameter	Caro kecation

Paradosigi	Geo. Incatton	Vertical layer	Maximum error	Duration of go.	×	Sampling Z	T.	x .x	
					†				
									1

Parameters						0	CC FANOCRAPHIC	PHIC								×	ETEOR	METEOROLOGICAL			
/		Cura Coura		-	Scored	Wamer	Wager W. prace Ambient Ambient Trans-	Ambhent	Amblent	Trans-	Kave II	Wave measurements	-	Air	Atueon	Atusos Atmos.	2	100		Mark	W last
Characteristics a	7	ä					(dapth)	T T	MG/86	parency	¥	ž	ă	9	o bect	press	M POO	Lettors	e de la companya de l	ŧ	Dage.
Congression Mention		9	x.02	ODER MOTH to to 68 WA AMERICA	America	* Cost o	Day 3 Command reform to to By N. American Commercial to 400 g. mg	ī													
Vertical layer	-	The same	Surface to 3640 m dopD	e de	!						Surface					Tapa	f beary m	Top of becy mest to surface	BOT.		
Brees (Say SCA)	+-	9	3 8	0 10	25.90 to	3	0:00	0 to 2 0 80 to		3 6	9	2	9	0 to -25 to 0 to	3	8 00 to	-25 30	-25 to 0.01 to	0-12	٥ ي	o to
		•	2	~ _8	54 00 ga	0		14/E	-20 @	10%/8	8	40 sec.	360-		10 kg	1099 mb 40°C	2.04	2.0 kg/m	in./ br	360	160 kts
Max error	1		8	- 65 th 0 01 0/cs 1 the	3	\$10 7:00	91.0	ž	9	£.	0.2 %	9.1 mmc 5.	:,	0.1.0	V3 10	9 1	0.2°C	16	10.0	3.	0.5 kts
(\$ 41 BOA)			2 5	, –							9 10g	94 19							10		or 34
Darathen of ch.	∳ 	8	1	IN OF Beet puriod avg. Bepresended	The second	Ê															
		# 854	3 600 s mg/106-150 a. m	150 B. #									1								
1	2	3	No ion	28 Stel. LA PEO Sevels (* men. bothom	Pottons			2 berole			Burtace										
L.,		in yes,	5																		
Ch. synch. X.Y. (2) 10 min. (1 min.	6	4 100	-										_								

Martinesses Bit of Laborating Ground 13(cs.)/Founds of Personals out to 130 m. miles Site <th< th=""><th>2 REFINED AMO 4 81 REQUIREMENTS USE, DECARMENT</th><th>MO 4 81</th><th>INCOUNT</th><th>ECOL</th><th>USEN, Theor</th><th>President &</th><th>A D</th><th>oratory Acoa</th><th>Sound Laboratory Acoustic Raypeth Studies</th><th></th><th></th><th></th><th></th><th></th><th></th></th<>	2 REFINED AMO 4 81 REQUIREMENTS USE, DECARMENT	MO 4 81	INCOUNT	ECOL	USEN, Theor	President &	A D	oratory Acoa	Sound Laboratory Acoustic Raypeth Studies						
Str. Str.	Course	and the same	Black L	Librard Boxs	d (3 loc 3/		er meda o	mat to 150 a. t	ulbe						
Sec. Constant Store	Vertical Is	ž	Me to							8		•	386	Sfc	Sfc
1 male 1 m	See .		1	0.88 to	90 90 97 97 97 97 97 97 97 97 97 97 97 97 97	\$500 to	0 to	0 to 9700 pan		0 to	-	0 to	900 to 1060 mb	0 to 360*	0 8 8 13 13
2 5 min 5 min 5 min 5 min 6 min 7 min 9 min 9 min 1 mi	Max I seems	ş	6	11 18	0 80 0	\$10.0	0.2°C	0.255		17.0			1 265	7.	2 kts
7. Y	Denies o	-8	2 100							5 202.0		1	5 min	5 min	
71		¥, ¥	X							日			9 n. ma	E 0	\ \
The Tay of the Tay of		z	6 5							N/A		•	N/A	V /2	Z
X.Y. Units U		T T								X		•	0 mm 2	S min	
Z Unit Unit Unit	9	X	η. Ω							18 C		•	Unit	Vad	Unk
	;	2	3							Unde		Ī	CONT	Unik	Unk

RESULTS OF ASSESSED.

Bequirements fully met.

epairsments partially not and eby. All equirements hated in 2 above would be met with the exception of

The X, Y stacing of 9 n. ms (CNA) and variable (DO): Trentative "system" uses latital specing of 600 n. ms in DO and 100-150 n. ms in CNA,

The Z as mp., 2g intensity of 5 m. Trentative "system" standard LAPSO levels are more gross,

The Z as mp., 2g intensity of 5 m. Trentative "system" standard LAPSO levels are more gross,

The additions truck, of ob, when less than 10 mids (X, Y) and 1 min (Z): Trentative "system" allows 10 min (X, Y) and 1 min (Z).

Bequirements sot may ead why

Bedinstical Uncornading about ob. from beoy unationeded for long particle.

"These are 1967 data requirements act refused

CREY AREA	4. PARA	METERR WAS N	"GREY AREA" PARAMETERS WAS NOTESTED POR THE TENTATIVETY PROPARED DATA BEON SYSTEM	SEX PROPORED DATA BOOK SYS	STF. M			á	\$ \$
Parameter		Sectimation	Sedimition Mooring Last.						a Since or paginar
(APK: LOK A. SE	6	Block telland	Block lettered found (3 loc) 3 of ther out to 150 nm	Jon mj	_				
Vertical layer		Me to bertum							
Renge		4		**************************************					
Magazin uts error	11104								
Duradion of ob-	8	2 m.r.		The state of the s					
-	*	ie co				The second secon			
See pling	2	24							
	Thane	S mada 20 mada		A)					
Y X Y Water (d.)	×××	4							
Noma artea		1.00							

REPINED AND 4 *1

PARAMETE	THE COME	PARAMETERS COMBDERED BEYOND THE STYR BLATE OF THE ART FOR THE TENTATIVELT PROPURED DATA BUXY BYSTEM	THE STYN BI	ATE OF THE	ART POR THE S	RHTATTVELT P	MOPLARED DAT	'A BOOM EYETE	*				
Parameter										 			
and derivative		-		7			-1					_	
Vertical layer	į					-	<u></u>	-				1	-
1	:	:	1			-	-	-					
Masternes error	4104					-	-		-		!		
Deruthan of ab	ŧ		NAMES AND POST OF THE PARTY OF	+									
		•			:			!		-			-
Beargiling Internetty				+				+				20.00	
	1				•	+							
1 3 to 1		*- -				:	:	11					
Ner. arte	!				- trademanders								

Ė	i		·				CIC EAMORINA PHIC	PHIC			-		-	THE PERSON NAMED IN COLUMN		M	TEORO	METEOROLOGICAL			
		110		Ma Shading	Promite de	P. Libr	Water W prese trainest Ambient Truns	· Palment	A subsect	I rate	3	Spirotte of the rate	₩	Air	Atmin Atmos	-	3	1000	Precto	N.	2
Charmeteriotias						į	Î	Š	*	Į.	ŧ	ż	i i	î	ž.		M SQ	letion	3	ŧ	D R
Ampaire (applicable)		į	N. O. P.	V C.O. 01	A meer/see	* (Chest (Armen 649 H to 40 To 7 M American Constitution of the Const		husbons		No.	-			-	-		1			
Vorteel bys.		L	Author to 1688 at 4598	4		•				:	Part and		-			1		The state of the s			1
1	•-							-		T			-	,		•					
			3	\$ 0 C .	1 E	3 5	10 0 10 10 0 10 10 10 10 10 10 10 10 10	0 × 3 · A		9 6	2 S 2 S	3 ‡	0 to 25 to	9 to 25 to 9 to 360* 60*C		- <u>1</u>	25 to	800 to 25 to 0 01 to	0-12		0.00
Mas error		:	-	0 mg han 0 kg 0, 00 1 mg	1	210	ž	×	*	ĸ	÷		;		_	1					20
X	•		\$ **							_		<u>*</u>	• •	•				<u></u>			500
Deresta d da		1	Tag Year	last or there period are lastre	**********	: . Ê	:	•			7	7:	+	-	-i	-	-	7		T T	t, ë
	-		Ś	130							:				1	1				•	į
		1	A PEC LA	26 BM LA PMC) Service (- new,r husbany)	Part Control		:	1 kovetu			4		,			-		-			
	Say In	3	.						:	1		-		!	1	i		1			
TO A X TALE OF	₩ ×	1	Ì						:				1			-	Trimon .				

REFINED AMOUNT TO MECHANISMENTS ONN MEN	DAME OF REPORTERER	ENTS (MN		7.	· DC - Tost flos - worthsteass of Militas	No. of the last	3										
(Montprophet heralism	Asyruthers in North Atlantic our Pacific; where the State 4 to 6 in Chearred	In Worth Ath	Bandle: (per P	Pente	1	Marie 4 to	f is Cheer	2									
Vertical leger	••••••••••••••••••••••••••••••••••••••			-			· · •		<u>.</u>	_	+	} -	-	1			
	-	•					-		¥		21.0	-			-		
		· · · •				+			3 8		3 b	er, a company					
104 104 107		· . · · · •	.			· •			Ĕ		50	<u> </u>	; 	 	<u> </u>		
Carrana at the					· · · · · · · · · · · · · · · · · · ·				36 man	<u> </u>	So Ele	 		· • · · · ·	+	†	
				.			b		3	100 to 600 n m	B	<u>.</u>	-				<u> </u>
				· · · · · · ·		• · · . •	⊾a ;	•	× ×		× × ×	: •	ļ .		 		-
1		•	4 .	•		.		•	-		4 P.T.	-		 	•	 	-
-	·•.	• • • •					• ·• ·	• — •	< ×		<u> </u>				+	+-	
PPS(13 (# Amm made u	MAGE W.T.		-	-	~	-			A/X		ار در			-	-		

IV-125

Requirements nally upot

for Yeasestive Trystee or value is to to formats.
The table to a payon the factor wave measure member whether the coding will be exactly what is writted mount to reactived.

Administration of the second o	Parameter		****									_					
Alace Comments in Albanca - Fearfrage - Fe		•										•			Alexander a		
The second secon	MC148.Act		Asia mare in the	· Admin	F. F. 15.	where a	ex state 4 . 0	o in remer ed				•			•	;	
Constant of the Constant of th	HARRY TRANSPORT	•			•		:	•	P	<u>.</u>					:	; 	
Common Co	•		A Francisco		•	÷	+		· • · · · · ·	<u>;</u>	+	:	:			·	
Common Co	In attenues over	•	* * * * * * * * * * * * * * * * * * *		•		•		· · · · · · · · · · · · · · · · · · ·			·	:			-	
100 to 10	Deration of the	•	# # # Q :		.	:				-	+		:	:	-	-	:
The state of the s	ف روسیدی	•	100 to 10	•			1				+				•	—	
	Prompting and a second	· .	****		· •					:	+	:				·	
	•	•			· •			•		1	•			:			
			* * *	:	÷ +	: ·				++	++			++	•	-+-+	

PARAMETE	X.8	DERKE AFT	化表现人类的 的复数一个人的现在分词 医阿拉克氏征 医二苯基甲二甲甲甲二甲甲甲二甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲甲	=	ART PURTE	OF THE ART PURITHE TENTATIVELY PROPURIES DATA BUXIT STRITCH	CLY PROPER	TD DATA	UKIT STRITES	_					
Par metales				.											
	ion adjon				:	-		→ : :				Τ.	:		
		:					-			-		:	:		
No.				•		· •	-		:				·	· • · · ·	
Manage and seasons and trans-			•	:	:	÷	<u>;</u>	-			:	:		· ·	
Metalling of of	. 8	:				÷	-		A0100000 00 00 00 00 00 00 00 00 00 00 00	-			:		
- "		eriffere maken 1846			· · · · · · · · · · · · · · · · · · ·	· -	e a pe rior .					:			
Seriotine .						. .	<u>.</u>						-	:	-
				· ·	:	· •	-	•						- +	1
							4 4	-		· •	: 	· · ·			
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			form come growing and companies of the c	en en en en en en en en en en en en en e	· · · · · · · · · · · · · · · · · · ·		-		And of Australia, Spirit Spiri						

Para meters			And a second sec			IN VANCHURAPHIC	ZHI.C								¥	FTFORK	METFOROLOGECAL			
4	Carry Carry		To the state of th]]	2 1	Marker to process Ausbreaut Ambident Trans- terms complete bught and see parrents	A michaent Light	A market	Trans	2			- 3 - 3 - 4 - 4	Atmen .	Aima	1 2	In the contract of the contrac	Pracip	Şĕ	2 B
				A CONTRACTOR OF THE PARTY OF TH	STATE OF THE PARTY.									-						
	1	.09	A 20 0	A RESTRICTE	0 Marie) 40	of Chip 4 chil 2011	ī												:	
:	-	3	1		:					Bries					Top of	the Acres of	aet to surà	2		
Ĭ.	į	2	. 3	- 1 De 53	3	40 1 0g 0	0 10 2 0	5 2	S	S	8	010	35 26		800 to	3	G 50	0.12	3	0 0
	ż	*	;	M 37.	1-0+	ş	í	€ 0.2	* 15°	8		.0		À ci	9E 9E 5).O.	2017		9	140 kts
	; -		3 10 4	3		6		•	2	2.7	0 1 8			<u>1</u>	G 1 0		<u>*</u>	10.0	÷,	0.5 Ma
-		K			evinent at					5	*	_						# N		¥ 5
1]	i	E) New Park	Ì	E														i	
×		1										_								
	1	200	: :	Table 1			7.4			P. J. S.										
•	}	· •						:	:			 -			, ,					
Ø - ×	1	1																		
	Congress bears Version Cyr William Version Cyr William Version Cyr In Congress A T T T T T T T T T T T T T T T T T T				1	1														Top of carry marker Top of carry marker Top of carry marker Top of carry marker Top of carry marker Top of carry marker Top of carry marker Top of carry marker Top of carry Top of carry marker Top of carry marker Top of carry Top of ca

IV - 127

NU TINETO A	\$	1 MIGGET	UNIT MES ATT	1 (JOC)	MITTER DAMES + 64 ARGICINE MEDITIFIC (MICE), Scriege has of Chause graphy - Banic Neemerb on Horts Pacific (neem and Air	A) To	ALC: MINE	Echy : Ba	S'K Koom	irch on Ma	arth Pacif	De Comm	and Atr	27						į	
	1	Pecit	fix (ments)	Š	Partific (man 10"N to 60"N and 11	3	T.	s is feer make	Surant C	IT'W to 30'C, Allfornia Carress 12 5 7 to Cotembra Mover	Cotembra	Myer									
Vertical layer	304	2 X X	: : :		+	2 3 3 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5			## H # A		Varies	3 % C		T	3 2) 8	Mc to · 15 B	ŭ	ž	. 15 m	Secto Meto
}		s \$	3 3 3	3 3) 9	. i i	AS 1-447	*0 13	0 to 10 0		3 6 E	0 to 1 to	3 3	9 b	22 E8	806 to	806 to 25 to	01 to 2 d 12	12	9 6	0 to 160 kts
Maximum errer		: <u>.</u>	0 63 kts				-	•	; ;		2	0.2 ft 0.1 sec	0.2 ft 0.1 mmc or 10% or 1%	•	0.1%	1	0 1 mp 0 2.C		3 0.5 (s. At	L	0.5 m
Thrush & &	•		Total series	. 3	· •		THE RESIDENCE OF THE PARTY OF T	•			Inst or the	Inst or shirt				3	Ā	1	ă	Č OB	1
	*	\$00/ too n. w	. н.		Ţ	8	560 100 a set	X	1		\$00/100 n m	1		1	•	500/100 n m	1				. †
To produce a	د ند	LA PRECI		· · · ·	: - 	A PA	17. A 17%.		3.1.	•	2 ivia	× ×			. a	ž	. s	*	3/c	ें ह	. H
) ,;;			:	Ŧ	1 34			1		1 12.	:	:		Ŧ	1 1			-+-		
4. A.	× .	- 4 - 2 		•	•	10	2 E	• •	T		10 mc1.				7	10 rates				! - +-	
	~	4			1	1 361	ب	•	•		ana I	¥/¥		+	4						•
S REST. TS OF ASSESSED	A AMERICA	TA ALTERNATION	•			-	-	*	•												

Dampierrmania baliy mast

Manyatro mendia parkisaly ment sout why — All the respector manuse Limbed is a source excelled his mant with the carrespond on of . The conditionments described on the respector of the Terminalist of the Terminalist with the condition of the terminalist of terminalist of the terminalist of terminalist of terminalist of terminalist of

Begig resentations and why

• All Types area "part attended a. kmp of jeg 2 Jurgent Seater measured by other means or uncertainty about ob from heay unattended for long partods

• All albert part meters betted at bothers of pg. ? (Constant and Layred 5 / 2 N/A)

REFINED AMO # 84 REQUEREMENTS Continued,

Sance as Page 1 Suchastion Sic	Parameter		Total cloud	Tidal	Mooring		Photo mar ine Sub-surface	Radiation	(active)	1,000				A
State as Page Stor			amount	Guetagtion	080		ingolation	or the		or of the same	S De la Contraction de la Cont	 		
Not stated Bottom Stc 9fc Stc is 10 m Stc 2 levels Stc ***-or 105 Not stated 0 to 1004 Not stated 0 to 10 0 fc	Geo locado	£	Same as Page							T contrast	growin		•	
Out to 1004 Not stated Out O	Vertical lay	ē	Net atated	Bottom	Stc	386	Sfc to 10 m		Sfc	2 becola	15		•	
cor 1093 Not stated 51 Not stated 17 0.3°C 0.1°C 0.0°R kg Num stated X Y \$600 / material Cont. Cont. Cont. Cont. 1 vr Z N/A Bottom N/A 1 · 10 m N/A N/A 2 levels X Y 19 min N/A 1 · 10 m N/A N/A N/A Z N/A N/A N/A N/A N/A	Range		0 to 1904	Not stated		Not stated	0.50	-10 to	50 to	o to		· ·		
X Y SO3 Cont. Fast. Cont. 1 vg Z N/A Bottom N/A 1 v 10 m N/A 3 levele N/A X Y 1 pmin N/A 1 v 10 m N/A 2 levele N/A	Meximum.	70.	103	Net stated	1	Not stated	2,1	0.5 €	6 1 1000	0.7 Rtg	Not stated	* **	. 4	
X Y S60 2 N/A Bottom N/A 1 · 10 m N/A 2 hevels N/A 2 hevels N/A 2 hevels N/A 2 hevels N/A 2 hevels N/A 2 hevels N/A 1 hevels N/A 1 hevels N/A 1 hevels N/A 1 hevels N/A 1 hevels N/A 1 hevels N/A	Duration of	8	lost.				Cont.	Comt.	. Gt	Cont	5		+-	
2 N/A Bottom N/A 1 · 10 m N/A 2 levels N/A 1 · 10 m N/A 2 levels N/A 2 · 10 · 10 m N/A 2 · 10 · 10 · 10 · 10 · 10 · 10 · 10 ·		× ×	35									:	3	:
2 N/A Bottom N/A 1 10 m N/A 2 levels N/A			198 n. B									•		
Time i br 1 x x 19 min x x x 19 min x x x 18 min x x x 18 min x x x 18 min x x x x 18 min x x x x x x x x x x x x x x x x x x x	Sampling interactiv	2	V/Z	Bottom	₹/ X	A/N	1 · 10 m	W/W	K/K	2 levels	-	· •	-	
X Y 19 min 2 N/N 2		T F	i br										 -	
V/N 2	45	XX	19 min									1		
		7	V/N							T	_1	nio.		

AETERS CONSTIERED REVOND THE S-YR STATE OF THE ART FOR TRE TERTATIVELY PROFORED DATA SHIM SWETZM

ated by Vid	Parameter		Heat	Cloud	Cloud	Dust	Parameter Riux Cloud Cloud Duet							[
Second S	Geo location		Same sa page			•								
Not stated Optical or 0 to Pilter	Vertical laye	i.	3Kc	Not stated	Sfc to	-15 m		-	<u> </u>					
Time The Fig. Th	Ruge		Not stated			Piller				•	:			
X, Y 500 Conf. Inst. 1 st Z N/A N/A N/A N/A Time 3 hr 1 st 1 st Z N/A N/A N/A	V-rimuza er	roe	Not stated	Probably large	103,	Not stated			-	· · · · ·				
X, Y S00 0, mi Z N/A N/A N/A Time 3 hr X, Y 10 min Z N/A X, Y 10 min	Duration of o	-é	Cont.	fast.	ibet.) wt			-			· ·		
Z N/A N/A N/A N/A Time 3 hr 3 nk		х. х	500 100 n. m				-			_ i _	· —- 			
Time 3 hr 1 mte X. Y. 10 mte Z. N/A	Sampling	2	V/X	V/N	8/8	N/A					:			
X Y 19 mic Z N/A	•	Time	3 hr		*	*				-			•	
Z N/A	1000	X. Y	10 min				-	-	-	·				
		2	N/A	+	1 1	•			+	:				

~
Z.
1
Z
~
2
Ξ,
π.
œ
=
Ē.
4
ř
5
>
-
C)
=
REFINE
Ξ
~
=
4
ਨ :
\sim
-
ET FOR
ia)
Ŧ
¥
5
5
ž
ž
ž
SKENT
SOME N.
SKENT
SESSMENT
SOME N.
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT
SESSMENT

1 TENTATIVELY PROPORED NORS SEMENG (APABILITIES	ELY PROF	EN CHIED		MG CAPAB	17LES														ž	Kevised 32 Ang '60	OS BUY
<u></u>	P. Stematory					0	OCE A NOGRA PIGG	VPRIC.				i				Z	FFFORG	MF PFOPOLOGICAL			
<i>j</i>		Carr. Curr	Catr	Se Hadra		Water	Water W. press. Ambhens Aumbend Trans.	A.mbheni	A salbiersi		Wave	BORS UTCHOUSES) Jie	'Limbore	Atmos. Atmos. Dew Inc.	346		Previp Wind Wind	Pal's	Wind
Characteristics	200	j.	dir. speed			Ĉ B	(despth)	1	no.	notes paromy	£		ă	Ě	i i		7	lation	2 E	ŧ	
Osperade beetle		8	Deep Opens (66°H to 69		Byn Asserted	na Count out to 400 n	an Count out to 400 n md	N P		independent og professionerskaller programmer i forskriver i de stanskriver i skriver. Se i	* more negation.		-	ecci mande	CENTRAL PROPERTY.	-		Taranaca and	AND THE PERSON OF THE PERSON O		
Vertical yer	ž.	at the	Author to 5500 to day	2							Brrisce		-			Top of	Part of	Top of hway mant to nurfaces	aria Sura		Ī
Range (5-,r 80A)	r 80A)	0 . 0 .	9 to 0.05 to	0 to	4500 to	3. 5. 6. 0.	-6 to 0 to 10°	9 to 3.0 -90 to	-96 to	9 to	9 8	5 5	o to	0 to -25 to 0 to	ei c	800 13	25 to	800 to 25 to 0 01 to	800 to 25 to 001 to 0.12 0 to	3 5	, etc
				8						Т			3				-	E		e e	100
(5-yr YOA)	. =	.	9.00 8. 19.	0.03 bids 0 01 6/80 1 the	3	9:00:0 0:01:0:0	2	₩.	6	<u> </u>	0.2 P	0.2 fb. 0.1 see: 5: or 10% or 1%		ပ i စ	3	6 : 11	0 2 47	*	0.01 18.7 hr	:	2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Darration of ob.	8		Port per	Inct. or Roct period avg. (Representa	presentate 2	(BAS)		-		-				1	T		-1	T ::	:	- -	
	X, Y	N 650	5 650 B. m4/160-150 B. m4	-150 a. H				-		-		THE PROPERTY OF THE PERSON NAMED IN COMPANY OF THE PERSON NAMED IN CO. P. L. S	-			:	:		:		1
Table of the	2	20 BET	MA PBO los	20 Std. 1A PSO (oyeks (+ mean bottoes)	bottom)			Z Jerolin			Burtace				-	-		The state of the s		:	
	The	the grant of	-							-	-					The second secon			***		
C. synole. X,Y, (2) 10 mts. (1 mts.)	X,Y, (3)	10	(1)										-	1					And the second control of the second control		1

		Ľ			 - 		-		-		-								
Cognition: Josephia	TOGGGG GE		Pacific, P.	Deep Profile, Primarily Deep	er Cerrenta	nte													
Verti. al layer	.yer	2 2	Sec to 10,000							-	_					<u>-</u>	-		-
Range		9 %	6 - 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0				+			-				-	+	-			ļ
Moutiseen error	error	30	87											+	+-			-	<u> </u>
Duration of the	g	H	ĭ			-					-	-	-	-			+	· -	÷
	ж -	7	3					 			-			ļ	-	 	+-	+	
To empling	2	3 m from	3 to from 3 as from hottons bottom				 	 			-				-	-			
	Ę	1 27	1 9.5								-	-	-	-	-		<u> </u>	: +	!
6	Α, Υ	1 mts	- rada			-	-			-	-	+	-	-		-	+-		
,	2	C _{ank}	- F			-		-		-	-		+-	-				+	
3 RESULTS OF ASSESSED	CA ASSECT	BACKNI						-		-		*	-		,		1	1	

Requirements fully met:

Bequive sense partially met and why — Carrent Velocity would be met with the enception of only goes to 5000 m.

The 3 m from bottom requirement at depths greates than 5000 m. Tendative "system" only goes to 5000 m.

The maximum error of 0.006 km for current spec : Tendative "system" value is 0.03 km.

The unknown X, Y specing it less than 600 m. mi: Tendative "system" by specing is shout 600 m.mi.

E SKE

Requirements not met sed wby

Characteristics if yeed the year Source Water Wigness And Characteristics if yeed the year Source Source Court out to 400 m Source Days Court out to 400 m Source Days Days Days Days Days Days Days Days			_	DE FANONTRAPHIC	\$ PHIC				:	-	4	<i>i</i>	1.	7 Thursday 10 Co. 1 Th.			*
Characteristics dir speed Ceographic location Described resembly Verbonic layer Verbonic layer Verbonic layer Surface to 5000 Kange 5 yr Suk, to to to to to 18 km Surface from Such 18 km	,	Source	¥ aler	N. ST.	Ambrens	T Ambreller	1					-				٠	
Vertocii byer Surface to 5000 Kange o yr 9 tA, the to 5000 Kange o yr 9 tA, the to 5000 to 5000 Kange o yr 9 tA, the to 5000 to 5000 Kange o yr 9 tA, the ta 5000 Kange o yr 9 tA, the to 5000 Kange o yr 9 tA, the to 5000	£110115	pe ect	the st	Serre company on the parency Ht from the form	lught.	DOM SE	parency	M ME	Der Der	Total Series	i de la companya de l	Atmos Armos Jels Bro- elect press plant Japon	<u> </u>	la c	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Precise Acad Apple	7 L
<u> </u>	VIS. 19 03 N. 115	America	E CORHE O	ut to 4000 a	m.			j	-		-						:
š	A depth a se	1	:			•		Shirther						:			
	. <u>s</u>	4500 20	-	5 to 9 to 104	0 to 2 0 7 80 to		91 (1	 	-		: :-	010 010 010 011 011 011	* .	the words must be surfained	÷ 181		
	00 33 24	581H (198	3.0+	184	£	6	70%/m	100 ft 40 mer 560 - 60 - 7		1.09	-	1			-		<u>.</u>
-	tts 0.01 0/00 1 fps	t fipe	21.0 3.10.0	11.0	=	: 6 3	· · · · · · · · · · · · · · · · · · ·	1. 2 (8 1.1 um)	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	<u>.</u>	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	to the colorest Section of the colorest colorest		- - - -		2	1
	Inst. or Short period avg. (Representative)	TO SHOW THE LE	Ē	r		7	7		- -i			_	_		Ė		· -
X,Y 500 p. my 100-150 p. mu	00-150 a m	-		1				:		-							
Intensity 2 20 Sed. LA PSO levels (* near bottom)	leveis (Dear !	(diotpoq			2 levels			Burface		- 	:	:					
Time 6 hrs hrs					j	:			1	-	:						
(To synch X Y (D 10 min)							:	:		• .							

"includes Measurements of Swells

2 REFINED AMO # 86 REQUIREMENTS ONR, Woods Hole Oceanographic Institution

						The state of the s	8					
Geographic location	location		e Gulf St	eam Proper/W	अर्था (स्व	Outside Gulf Stream Proper/Within (all Stream Proper-36"N to 45") and 50"W to 75"				-		
Vertical layer	i.	Sfc to	ļ 	-	8	36c to 1			:	:		
		bottom		•	<u> </u>	bottom		Sfc				Γ`
Range		ං දි දි දි	68 53 54 54 54	30 to	7 5	2.00		15 30		· •		
Maximum error	Br rog	20.		0.010	왕= * 	1 (50 C		2.04		:	35 T D KE	- -
1	1				A 250.0	Plow THCL		2.0		-	± :	1 4 .
	3	inst			Inst	22	-		•	+ ′	Shortler	
	Х. Ч	9			09		+		:	· ·	dest, par	-
Semoling		THE CO.				n. m.		3		<u>-</u> -		
intensity	z	200 at	(At least		±8;	1 00 II II 00 II II 00 II	+ -	Ting in the second	-	4		ř
	Ě	24 hrs		•	3	24 hrs			*	···		
(3b gynch	Х. Ү	15 mula		1	1 2	15 min	+	74 01.0	,	F	24 brs 14 srs	<u>.</u>
	2	. Sec			-		-	15 aug	-	-	Drimer Comme	- c
RESULTS OF ABOUT SELECTION	X A 887 96	100.00			,							-

Requirements fully mer.

Requirements partially met and why All requirements listed in Cabove would be met with the exception of

• The X. Y spacing of Forlun mi and loon min to BO. Tentative "system" loodal spacing is from no Bound Inter-156 none (NA).

• The 3 second 2 synch of ob. Tentative "system" allows I mun.

Registrations and and why (Aygeb Lincertainty about 30 from bury unautended for long periods)

*These are 1967 data requirements ac. refined

i will out

REFINED AMO ♦ 86 REQUIREMENTS (Continued)

Geo location Outside Gulf Stream proper veritin Gu Vertical layer Sic to bottom Range 2 to 8 ml/A Maximum error 0.2 ml/A Marsheu of ob Inst. X, Y 60 10. ml Mamphin 2 100. at 1 Mamphin 2 100. at 1 Mamphin 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 2 100. at 1 Mannelity 3 100. at 1 Mannelity 3 100. at 1 Mannelity 3 100. at 1 Mannelity 4 100. at 1 Mannelity 5 100. at 1 Mannelity 7 100. at 1 Mannelity 8 100. at	Qulf Stream proper – 35"N to 45"N and 50"W to 75"W
Sic to tootom 2 to 8 ml/A 8 ml/A	
Y . X	
Y . Y	
۲ , 2	
х · х	
2	
Time 24 hrs	
(E. eynch X, Y 15 min	
2 30 sec	

Cab. Increase Land Cab. Cab	Parameter	ŧ	A. C. C. C. C. C. C. C. C. C. C. C. C. C.					-	-			-		
A X X X X X X X X X	Ges. locat	48			1									
λ φ. χ. γ. γ. γ. γ. γ. γ. γ. γ. γ. γ. γ. γ. γ.	Vertical la	E 3.64			-					-			· •	
X X Y X Y Y X Y X Y X Y X Y X Y X Y X Y	P. Carlot				-			-	-				—	
X x y Time X x y 2 x Y x y X x y X x y	Maximum	error			-		 - -	+				-		
X Y X Y Time	Duration of	8		! .	-			-	+			+	+	
7 Time X Y Y Z		X. Y											•	
Time X Y X	Sampitag totenaity				+			+						
Z Z		Time			-			+			-			
1	Ob. synch.	 			+				-	-				:
	Remarts									 		 		

*	Parimeter	_				0	OCEANOX.	\PHIC								>	FIECH	METEOROLOXICAL			
		Curr Curr	Curr	1	Sound	Water	Water W press Ambient Amotent Trans-	Ambient	Airotent	Trans-	Wave n	Wave measurements.		117	Atres	3 tmon	Dew Insc	Insc	Precip		pu 14
Characteristics	808	ŧ	D 000		D	ote s	d septim	light	nos se	parency	ž	Per	Dir.	ĝ.	1961	, F25, 1	point lation	latem	2	r.	ţ
Seographic lucation	location	Deep O	Dem (60°5	1 to 80.8	A merica	In Const or	Deep Open (60°N to 69-5) American Coast out to 100 n m	3													
Vertical layer	Į,	Surface	Surface to 5006 m dapth	depth						;	Surface					* # L	f truck m	Tap of buoy must to surface	face		
Range (5.yr SOA)	r 30A;	2.0 □ 3	0.05 to 0 to 16 to	0 to \$20,96	58.00 to	-5 to 0 to 104 40°C pss	i	9 to 2 0 -80 to Norm - 20 db	-80 to	9 to 704 / m	0 to	1 to 0 to -25 to 9 to 40 sec 350° 60°C 10 kg	3 is	01 57		300 to	25 to	800 to 25 to 0. to		i i	
Mar error		٠	0 03 kgc or 19	0 02 kHz 0 01 0/00 1 fps	ed -	0.010	110	11	eg .	ž	0.2 ft or 10%	0.2 ft 0.1 sec 5.1 0.1 0 or 10/2 0 v 13	3	<u>ن</u> ا	\$ 3	I mb	د	·	. } 	· ·	111
Dunties of ob	8	last or	Sort per	last, or Short period avg. /Representative	epresentat	i e A F						7		7	•				: :		
	×	. 690	100-	- 600 u m/100-150 n nd						! !					:		1				
Se mpling Intensity	2	20 Std	IA PBO lev	20 9td IAPBO levels (* near bottom)	boxtom)			2 ievels			Surface					:		i i	:		
	Ę	S brack bra	bre																		
Ob. synch X.Y. (2) 10 min, (1 min)	X X	10 916	i min	-			!								1			:		;	

ong Currents
ekds in Str
and Mass Fi
of Velocity
ty – Measure
ra Universit
S. S.
REQUIREMENTS
æ
S REFINED AMO

	Geographic Incution	location.	Major	Major Currents of the World	Vorld				
9 to 6 tos 2 to 0 to 360° 6 trs 30°C 5600 ps; 4.b. 10° 0.1°C 0.3 f (4b. 10° 0.1°C 0.3 f (5b. 20° 20° 20° 7 20° 20° 20° 7 20° 20° 20° 7 10° 10° 20° 8 10° 20° 20° 8 10° 10° 10° 2 10° 10° 10° 2 10° 10° 10°	Vertical ia		Any	1	٠ -				•
1.5 35 0.1°C 0.5 F 1.4 1 month 20 m 20 m 2 20 m 20 m 20 m 2 20 m 20 m 20 m 3 20 m 20 m 20 m 4 1 to 3 1 to 1 1 to 1 7 1 to 1 1 to 1 1 to 1 7 1 to 1 1 to 1 1 to 1 7 1 to 1 1 to 1 1 to 1	Hange		3.58 5.88	3 3 9	2 to 39°C	<u> </u>	1947		
(*b. 1 m.onth avg X	Maximum	1 P.O.E.	2	*	0.1°C	1		•••••••••••••••••••••••••••••••••••••••	•
X. Y 1 for max 2 20 m. 20 m. 20 m. Thme 1 to 3 20 m. 20 m. X. Y 1 br 1 br 1 br Z 1 br 1 br 1 br In 1 br 1 br 1 br	Duration of	4	l mont	+ +		+ +		•	
2 20 m 20 m Time 1 to 3 X, Y 1 br 1 hr Z 1 nr 1 hr Z 1 nr 1 hr Z 1 nr 1 hr Z 1 nr 1 hr		XY	1 15 0	xem)		:			
2 20 m 20 m 20 m 20 m 20 m 20 m 20 m 20			Stream	١			•		
Time 1 to 3 X, Y 1 br 1 hr Z 1 hr 1 hr	intensity	2	E 92	20 m	6 0.2	-		· · · · · · · · · · · · · · · · · · ·	<u> </u>
X		Ę.	1 10 3	1	1	· 		•	•
Z 1 hr 1 hr	. asnob	†	1 br	1 hr	†		+		
	; ;		1 15	, br	† !	7 pr			

Requirements fully met.

Requirements not not and why

• Electrical Volume Conductivity - Uncertainty about ∞ from buny unattended for long periods

*These are 1967 data requirements not refined.

REFINED AND 4 97 REQUIREMENTS (Continued)

	***************************************		Control of the last of the las							
Personal		Elec Vol.								_
		Conductivity						 		
Geo. location	•	Major Cerr. of the world	the world							
Vertical layer	3	Any depth								
1		45 to 66								
		namilio/ena								
	*	0.02								
		man Ho/can		-						
Deration of ab	8	1 mo.								
	×									
;		ere de man							-	
T L	2	8								
	Ĭ	i to 1 days								
1	Χ. Υ	ibr								
	Z	1 hr			-					

AMETERS COMBUSARD BEYOND THE S-YESTATE OF THE ART FOR THE TENTATIVETY PRODUCED DATA RINDS MYSTEM

Parameter				 					
Geo location	¥								
Vertical layer	ł								
Range									:
Marimum error	5								
Duration of ob-	8								
	χ. Υ								
Seampitag Internativ	z								
	Thus.								
1	X.Y								
	2							 -	
		A	The same of the sa						

Page 2

1 TENTATE ... PROPORED NOME SEMENG CAPABILITIES

36	
¥	
₹	
20	
ž	
Ĕ	
å	

Ž	Para motore					C	OCEANGGRA. HIC	HAC					-			Ř	TEORO	METEOROLOGICAL.			
/		Curr	1	Se Heddy	1	Water	Water W press	١.	Anthen	Trans	Waye m	Wase measurements.		AIF	tmoe	Air Atmos Atmos	Dew Inso-	Inso-	Pracip	bai *	¥.1Bd
Characteristics	9		Gr. speed		The state of	1	(depth)	la de	actice.	parency	¥	r d.	ă	9	e lect.	Dress	pote	lation	ă	ŧ	peed
Cocyraphic lossifies	-	0	.090 TEG	\$ 00 07	America	E CORR O	Dies Cours (60-17 to 60-5) American Count out to 400 n mi	ım:					T								
Vertical layer	1	Part Les	Arrana to Sees as depo-	8							Surface	:	.			Top of	buoy ma	Top of buoy mast to surface	#C#	:	1
Fange (Sayr BOA)	Š	3 . X	0.05 to 250 to 2	0 to	\$ % 8 %	to -5 to 0 to 10*	0 to 10*	(to 2 0 -50 to by/m -20 db	-	0 to 70%/m	0 to	0 to 1 to 100 ft 40 sec		0 to -25 to 0 to 360* 60*C 10 kv		300 to	25 to	0.01 to 0	800 to 25 to 0.01 to 0.12 6 to	2 5	0 to
Max error (5-yr SOA)		:	0 03 Et a	0.03 little 0.01 0/00 1 fps	3	0.01.0	91.0		6	2	0.2 fs 0 1 ac			3-170	_	0.3 mb 0.2°C	0.2°C	. ±	0.01	:	42
Dennie o	8	5	Led Lead	last or Beat period avg. (Nepresses	STANGER S	1							+	1	1	T	1	-			
	χ.Υ		2 100 m/100 14 a. m			-			-				+							-	
Interestor	Z	2	IA PBO law	20 Sed. IAPBO levels (* mear bottose)	botton:			2 bevela			Sur face									-	
	Time	ang years	E										+		-	er er erenen er e engele gebetere					
Ob. oyuch. X.Y (2) 16 mate, (1 méa)	X.Y (3)	10 mater	(1 (1)							many of management party desired			-		-					-	

"Includes Managerenemes of Swells

2 REFINED AMO # 88 REQUIREMENTS Naval Undersea Warfars Center-Research on Underwater Sound Propagation Patierns

Geographic location	location		San Diego to 300 Miles out in a Ci	les out in a Circle							
Vertical layer	1 346 1	. 3gc .	Mc · bottom	We to		Bottom max 700 m	3 4 C				25c to
Ranga		9 0 %	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 %		Needs	0. ts			0.00	7 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Mainam error	• r 1934	20-	0 2 Fra efr. 1 kts bottom	0.270		A/R	301			1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Deration of ob-	8	Ĭ	last	1801		1 min	1 min			1	1 4
	×	10 8	1						And the second of the second o	roth	rena
3) talent			 					+	1
Interestry	7	bottom bott	Mc.	10 70 E		Bottom	N/A			Not	Not
	F	4 br	+ 679	e a New		4 ars	4 pre			1 bra 1 bra	Parison a
Ob synch X. Y	×	X X	Y/X	V/N	+	N/A	N/A			< N	
	2	10 min	10 mains 10 mains	10 min		V/N	V /Z			10 min 10 min	200
J. RESULTS OF AMERICAN	CF ABBRE	SENCENT						The second secon	, , , , , , , , , , , , , , , , , , ,		

CERCLES OF A MECHANICE

Requirements fully met.

Requirements partially a et and why. All requirements listed in 2 above would be met with the exception of the Z apacing of 7 to 70 m focal 50 levels to 700 m. Tentative "system" has only 12 levels to 700 m.

Now, of the above measurements will be of value unless made in conjunction with rather involved accustic measurements at the same station using bottom mounted hydrophone arrays and elaborate signal-processing equipment. It is doubtful that any sensible arrangement could be made to satisfy their requirements with a general purpose busy. Requirements not met und why

[Para meters)	OCF A NOCR A DUTC	DELL					-						ž	and 20	Re Assed 20 Ang 'ng
/	_			-												Ī	TEORO	METEOROLOGICAL			
/	/			In the ty	Score Comment	Water	Water W press Ambient Ambient Trans-	Ambiens	A reabisesst	Trans-	Wave measurements.	PR.Bure III	.72		Atmos	Atmos Atmos	Dew laso.	laso-	Precio W ad	8	Paris de
Carroteriales					Ì	Ì		Ę	3 5	parency	¥	Par	ä	2	elect	Seard	poyer	lation	ate		peeds
Geographic beardes		1	-094 ====	Every Operat (60"N to 60"8yN. American	. America		Contact that to 400 m mot	ő					T				Ī	1			
Vertical layer	į.	Perfec	Burthon to 1688 m days	670							P. P. Carlo	1				5					
Part Sys. Bos.	2	ā	20 00						- [3	2000 THE	top of odoy mast to surface	2		
	Ì	1	10	8	3 8 8	9 U	-3 to 0 to 10" 9 to 2 0 -80 to 40"C part 3y/m -20 db	0 to 2 0		2 to 2	0.00	5 5	0 to -25 to			900 00	35 to	800 to .25 to 0 01 to	11-12	200	0 to
Mary or rest		,	A (50 Me	10.00	1	100			ī	T				-	•	ORU REO		1028 mm 40-1 2 1 ly m	10./ br	000	160
(8-yr BOA)		_	A 15	8	.	3	÷	<u>.</u>	6	£	0.2 ft 0.1 mg	0.2 ft 0.1 sec 5. or 104 or 19.	:	0.1 °C	16.	£ 1.0	0.2°C	14	0.01	.2	0 5 kts
Duration of ob.	8	3	L	last, or Short paried avg. (Representate	Salana ada	Ê				1				-		1	7		. Dr.	-	or 34
	X T	4:	-	5 000 a 150									1								j
		¥ 9	IA PBO Jen	30 Sed. LA PBO leveds (+ zear bottom)	bottom;			2 bevela			1		+								
	2		F										+								
Cb. oyneth. X.Y. (2) 10 mth. ()	× 4	10																			i

2. RETURN A MO # 55A PROFITENCEMENTS

Geographic loneties	lorseti em	CNA	med to 150 m.	CNA out to 150 n. mt, Culf of Mentic	lexico, 0 t	Geographic location to 150 m and, Oulf of Mexico, 6 to 30"N + 150"E, 0 to 30"N + 35"W to NA. 30"N to 45"N 150"W to A5"N	20'E, 0 to 30'N .	35 W to NA	30 N to 45	N iso	(o) Brigado)				
Vertical layer	ž	5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	2 to 25		2	8		ş			Sfe to	(analy)	offe to	-	lat and
1				-	E Coc	8	+	+	-		8 m	SIC	5	- Sic	aby, sfc
•		3 b	0 9		-2 to	1 B		9 6			-5 20	900 to	900 to -5 to	6.015 to	0 to 6 to
Maximum orres	1			-	3	+	+	404	12 m	ş	200	1060 mb	1060 mb 40°C	2.25 ly/m	
	!	5	9 C		0.5%	ν	_	0.2	0.2 ft 0.1 sec	ě	0.5°C	1 2	9.5°C 1.5%	1.5%	+
Deratton of sh.	8	į	1			+				\prod					38 40
			1					Inst	-	1	1	[pst			Inst In min if
-	×	300.	200 to 500		28 88 88 88	S		200 to	8		+-1	200 to			> 20 kts
Maria de la companya	2				N. C.	1		B. D.	+ 110			i d			Z00 to 200 m
		0.44	TOTAL MENTS		alv bas			N/A	<u> </u>	1	£	4 / 7		•	4 7
	ļ	2 2	12 hrs 12 hrs		12 brs	1.5		12 brs	12.8			19 61			
Ob pysch	X. Y	30 min	30 mag		30 min	4			 - -						12 nrs 12 nrs
	7	30	5		1		+	on or	anna anna			30 min		-	30 mm 39 min
				-	20.0	-		Y/X	-	1	54.5	2	1 1 / 1	7.12	

3 RESULTS OF ASSESSMENT

Requirements fully met:

Requirements partially met act why All requirements limited in 2 above would be met with the exception of a The maximum allowable error of 0.5% for current speed. Tentative "system" value is the larger of 0.03 kts or 1%.

The 30 sec Z synch, of ob. Tentative "system" allows up to 1 min.

The X, Y specing of 200—500 a red in the DO: Tentative "system" spacing is about 600 a. mi.

Regularments not must said why

• All requirements in Ambarctics 60°S to South Pole: Testative "system" does not include this area.

• Total Radiation in and out: Uncertainty about do from NDBS type buoy.

Page 1

ą.

THED AMO # 99A REQUIREMENTS (Continued)

Parameter		Toke	Total					
		rediction out challation to	challation in	-	 			
Ger location	5	7 m 10 m			T			1
Vertical layer	tyer	Nav afc	Mer afe					
1		0.015 to 2.25	0.015 to 2.25 0.015 to 2.25					
Maxtre us error	•	1.5%	1.59.					
Duration of ob-	8	Ę	¥					
	*	200 to 500	200 to 506					
Table 1	2	¥, ž	W/ V				40.00	
	į	12 hrs	12 brs					
4	χ×	No extra	30 min	 The second secon	+	-		The second second second second second
	N	N/A	< x.	 	 +			

STATE OF THE ART POR THE TENTATIVELY PROPOSED DATA BUOY SYSTEM	
	<u> </u>

AMEMBERS MEET FOR REFINED DATA REQUIREMENTS

					•							_				コン・アメンド・アイ・アー 小翼	-			
200						THE WANTED FAIR	ž.					-		,			-		F	
	٠.٠.	- A			9	Marine A continued Ambiantal Ambiantal Trans	A magazand	A zabbient	Trans		Wave measurements.	٠.	Air Atmos Atmos	XIII	1 # z	IN Inv	_	diserid	Wind	3
Che miche matter		_	Pr. Dadiy		ì	day.	11 C	¥ 7-3	Kind the Land Print	Ŧ	ž	i i	Ê	1	<u>x</u>	שויים השבר הובשה האתבר הוניים השניים	-	3	160	2
(contract) condition Dame (seems 100-16 to 40-16) American (1		A	A mee mode	5 10 10) 1	ement cent for this to the	ì													
		; !	`							Bertera					1000年	Top of buoy mast to surface	o surface	•		
A PROPERTY AND A PROP	È	Action to your In Co.			•		:		-	-	_		1 10	*					- 1 to	- L
Reads to by Mile.	ş ;		2 · 2 · 3 · 4 · 4	44.00 to 10.	31 · 0	5. 5. 8	 3 ±	3 4 04	£ 28 £		. j	,	100 ft 40 mm 350° 60°C 10 kv		¥ 11 1	jerten grafe 40. C. t. by en in. he	E	in. hr	· •	160 klk
			*					- '	, ş	. e	ž	<u>.</u> :	0.7 0 QM 1 0 M 10 3.1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		È	11 107				4
Mas aprox	<u>;</u>		- 10 mm - 10 m	\$	7 0	• • •		<u>.</u>	: _	#: # 1 to	*					~~~~		ž G		
December of the	1		Transfer of B.	to the state provided by the first tenth to the state of	F					•			•							
¥ ;		. 100 m/100 Her a	736	•								_÷								
-	Ž	20 2nd 1A PRO Lemela C. Mear Poofform:		Postflown:						Mirtex	;									*
1	المال المركوب	×										-					٠	:		
		1										_								

	Meso scale	
E system X Y (2) 10 male, 1) walking.	- AFT AFT AFT BENEFITHER TON NAVA ALEMAN OF A A A A A A A A A A A A A A A A A A	The state of the s
	M. A.F. SA.S Dr. onlyg, Apach/Pro-	And de sample of an order of the class of th
1 males -	COMPANY CONTRACTOR	
at service 1 N Y 1/2 10 mate, 17 water		
ٔ لُـ		

 $(\nabla \times 1.7)^{\frac{1}{2}}$

the Chandle honor?	(B) THE PROPERTY OF THE PROPER	the sault of March	Carry Pagalar Language at 1 and 12 and 13 and 13 and 13 and 14 and 15 an	10.77 T 17 16 16 16 16 16 16 16 16 16 16 16 16 16	- C (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	* E 31 M 50 .	S .	5 4.07 · 6.07	ייים אין אין די	י שמי ביינים	,		,	
1 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 4	.	3 4						b					
	130 m 130 m		15 c m			-	-• ·			•	- +	·		4
Renis	2 2 7		3											
			r R		+	•		•	· •	-•				
Mais County of Por	150 0 28					_								
			•	•	•		-+	,				•	•	
中 年 東東 山田	Shart line?		last									,		
-	. •	*		†	•	•	•		•		•	•	•	,
> -	the card As		<u> </u>				-							
	. 411	. •	• [A] 6 7 8 • •	•	•	•				•	•	•	•	
	<u> </u>		33					_					,	
	E.	•		•				•	•		•		•	
1	. 12 hrs : 3 hru		. 12 hrs								٠	•	•	
	•	٠		•								•	•	
-	**************************************	•	•	+	•		•		•	•			,	
•			1				-					-		

I REGILLER OF AMERICANT

Hangat removate hally seen

Memore remainde particion more and why 1, the participates trained to above. On the exception of

• The X,Y equation of of a root at the for leading to "equation; is about fools on the

• The measurement of or a root of a fools of remaining memore exception in the larger of 0.03 bins or 15

• The population of the Tendand of the Tendand agreem of the or 15

BELL COMMENCED TO BURN DIES AFFER Requisionments and must and why

a 411 requision embeds to Autority 50 % to South Poke. Tendalo The state of the s

かん! かんなん

AMMERSMENT SHEET FOR REFINED INTA REQUIREMENTS

Ĭ			1	Control of the American Company of the Control of t		:	1	Management of the second			to be a second s								Ř	07 Pest	Revised 20 Aug '68
				_			T	Ě								Ž	FTECHO	METEORO: 122CA:	1		
, and a second	1			-	Ì		Walter 15 press Ambrene Ambrene Trans	A substant	V.	Tirana		Wave measurements.		¥ .	Air Atraca Ataxa	•	Daw Ingo	Inne	Precio		Wind Wind
											£	į	<u>រ</u> ភ	Î	į.	D. C. C.	A A	E003	3		De av
-			N. S. S.	Down Common real Wiles adding the Armerhouse Consult one to 1000 a.	A 1998 FIRMA	Towns or	# 100 + 600 m			April 10 Company		1		-			4	7			
Vertical layer		į	Berfam in 160' in days.	5			•				-										
AND AND ADDRESS.	¥ 55 4	3	,		-	:		*	r							1.00	faces the	Tity of Huesy mast to surface	2		
•		ż	10 10 10	Ş	21 2	, e		30 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	3 6		er :	3	Uto oto	ر د د		00 to	25 to	1 02 10 0 103 12 1 01 100 H	10.50	5	
¥114					-	·				5 :	E 8	100	.096		10 kv	OBM MED	J.0+	1089 mb 40°C 2.0 by m	in. br	•	. 60 kts
A TT BEAL.			7	2	_	0	<u>*</u>		ŧ	£	2.5	0 1 ame 5 .		- J-1	O 1 - C 0 1 kv 1 1 1 mb	2	0.24	14	10.1	•	
Parama de	•	,	-	The or there period ray happy		ŀ					* * * * * * * * * * * * * * * * * * * *	÷	•			_			ė.		÷
	* * * * * * * * * * * * * * * * * * *		************	180 H 188							;		•								
]	M See (A PMC) levels	Me Ned (A PMC) townin : ment banklacen	and Lacon				•			1					i				
:	į						-			. •	ST.	:	-								
A A A A A A A A A A A A A A A A A A A		. !	. }							:											ì
		1	Î										•								

ST & CHE CHECK	BECKETER MENTS	TEN, MAY ALSON YOR YOR CALL	RATIONED AND STATES THE STATES OF SALES AND AND CONTRACTOR CALL STATES OF SALES AND SA	from the Sharener	· Sales Care	3			
-	Cars out to like in mit latt of his	NA STATE OF THE PARTY OF THE PA	O DO NOT 1 SO THE LO 1807 TO LES SON TO HAND A TO NOT THE TO THE SON TO TO THE TOTAL THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO THE TOTAL TO T	V TO NA. NO'N L	P IS T IS T	to 40 F. Antar	10010		
	3 8 3	37.0		Ě	*	Mc to T	Sfc Sfc to	<u>-</u>	1
*	3	71 2.	*		2 2 2 3	- 63 c	200 co) % + + +
	•	•		2 4 5 9 5	22 BBC 1850*	7.07	¥ 0+	2 25 IN 22.	366 100 Rts
4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8		***************************************			or 17 10.		I mb	•	. P
, ,		Jean I		ž	• • • • • • • • • • • • • • • • • • •	· •	+ inat	• 1	* 5 · 6 · 6 · 6 · 6 · 6 · 6 · 6 · 6 · 6 ·
-		· ·	At sime locations;	92		· •	+	, **	434 00
	LA PRE - \$4.86. 1.	THE V	(the arrests stated	di n opi		Ţ	30 to	Ŧ	C
, F		The state of the s		V ×		£	* * * * * * * * * * * * * * * * * * *	Ţ	* **
-	Pring S Bring	a ace					* ·	•	•
A sympa	1 2	. .		\$	•		3 pre	· ·	A bra chrs
_ ;	10 Boc 10 Bo.	8	**************************************	2	***	F	00 T	•	98
MANUTAL OF AMERICA	MACKINI			V.V.	1	2000	*	Ŧ	•

IV 141

Margas re-manute fullly man

Comparisonments partially must make whey — All improversions if ladding improve wrould be included the carriedation of • The instructional of the spaceful factories of the second second by the second property of the second o

bequire teams and mad and way

All requirements in Aniar-circ 448 to 8 Pools Fembalive in states down ord include this area
 February Machine in and ord contestable struct of from Tibps representation.

REFISED AMO # 1990 REQUESTED A continuedo

		Total	Otai				-	P1	
rate amore		radiation out radiation in	district in			:			:
Gen location	8	Seme as pg 1		:	•		į-	•-	
Verdoal layer	14.	Sear stc	Year sto		*			•	
Renge		0.915 to 2.25 9.915 to 2.25 by.m			:		+	!	
Maximum error	error	154	live (1)						
Duration of de	8	inat	Inst						
	× ×	30 to 60	3(to 60) n mi			:	•		
Jampling intensity	2	4 %	¥ X						
	Time	e de	600						:
400 A	×	30 86 C	30 sec				-	+	
	2	11.7×	₹ ×			-			

marks.

Parameter (5.5) (seaton) ertical inver Fange Maximum error Dureton of the	 -					
L Z D			:			
Nertical laver Funge Maximum error Durelon of 30				:	,	,
Hange Maximum error Dueton of th			-			
Marin on error Due ton of th			•			
Dutte, on of the					:	·- •
		,				
						 :
Sampling 2						-
					-	- ·
		-		•		
,					-4	*

30/00

<u>«</u>	Parameters					7	OCEANOGRA PHIC	PHIC				1	-		1	Z	FTFOR	MF TEORIN, CRACAL		and the same of th	
		Curr	Curr. Curr.	3	Sound	Water	Water W press Ambient Ambient Trans	Ambient	Ambient	Trans	Ware mu	Wave measurements		AIr	DCX457	unos Atmos	136.1		Prenty	W.lad	¥.
Characantedos	Son	ŧ	dir.	Ì	D 000	dia est	(depoth)	light	not 9.6	parency	Ĕ	Per Dir	-	Ê	e ect	# k	N K	istion	ž Ľ	ŧ	paoris
Geographia, location	location	1	(+08) gasa	¥ 20 50 5 3	i America	B Court	Deep Ocean (80"N to 80"5yN American Coast out to 400 n mi	E				1	-		+	1					
Vertical layer	ıyer.	Surface	Surface to 5000 in Arpth	de pob	1						Surface					Top	: tourd	Top of bury mant to nurface	***		
Range (5-yr SOA)	7 90A)	0 to	0 05 to 0 to	0 to 42 0/110	4500 to 5606 fps	01 5- 01 0-0	-5 to 0 to 10*	0 to 2 0	90 to	6 to 704./B	0 to	9 to 1 to 9 to 25 to 100 ft 40 mc 360.	0 tc.	2 to 2 0	0.10	1069 mg	25 160	10 ato 25 to 0 to 100 to 25 to 0 0 to 0 12 0 to	0 12 0 to	2 S	0 to
Max error		۰,	0.03 kts or 19	0.03 ltts 0.01 0/00 1 the	A	0.01•0	2.1.4	Ξ.	: <u>-</u>	5	01 0 1 mer	0, .a 0 1 mee 5* or 10% or 13	•		<u>*</u>	91 iv 91 mb 0.2 mC	0.2.4	<u>.</u>			
Duration of ob-	8	last or	Short per	last, or Short period avg. (Represente	Spreasouth	(QAD)	J				-	- 1		-		-	•	_		_	:
	X, Y	₹ 600 2	100	≤ 600 E. ma 100-150 E. mi				:		•	1										
Se moding Interests	2	20 Sted.	IA PBO lev	20 Sed. IA PBO levels (* near bottom)	bottom)			2 Jevela		-	Burtace		÷	:		:		:	:		
	F	6 km & bre	Pre								:		-		:		:			1	:
(3b. synech X.Y. (2) 10 cuta, (1 unin)	X.Y. (2	10 cata	(4 (41))								•		-		į	:					

Character Lorent or	10,000	1							***************************************				
		15 ×	* OF IC CORRES										
Vertical layer		Mc to			en.	ot og			:	1		_	!
		400 m			*	#00 m	E COROCE			_			
Range		3	21	30.2		-2 to	0.0		* -		†-	•	
		\$60€	s kts	8	*	200	8500 ped						
Maximum error	17.0	Tobe	2						+		:	۔ . :	
		deter	determined		<u> </u>	-							
Duranton of ob-	18	34 brs			-	2 4.2	24 1.00	•	•	*		•	
									-				
	×	Varies	Varies - 1200 ob	__\.					+	-	†		
		attes o	sites over cossns								_		_`_
Sonda a	2	Tobe	~ ≝		í	-			+	+	*	-	
(internation)		deter	determined >		! ! !		•		_			-	
	1. 1.00	2 0000				1	+			+-	+	+-	-
		1				# A B	2 CMAY						_
4	χ, γ	2 brs				E 2	2 hrs		-		:	+	
-				1		+				7			_
		2 hrs		Ī	.7	2 brs	2 hrs						
									_	-			-

RESULTS OF ASSESSMENT

Requirements fully met:

Paquivements not nest and why:

Rawinsonche Data, Flux-mass, Heat and Montentum: Considered beyond 5-yr buoy SOA.

*These are 1967 data requirements not refined

Page 1

REQUIREMENTS (Continued)

						-	The second secon							1
Parameter	_	 •												
Ger location	5		7	1	Τ		-	-	_	÷	-			
Vertical layer	10/1	-			:			:					-	
Resign		-					-	 -			·•			
Madmum error	error							-		i	:	; 		:
Duration of ob	8 %						-				-	-	-	:
	×							•				:		:
Sempling intensity		-		AND DESCRIPTION OF THE PROPERTY OF THE PROPERT				+	†		:	·		;
	TIME				-					i		-		:
a avanct	X, Y						+	1	1				-	
	2	-			-			-	+			-		
1					A		7							

		NO. 30	100 110	THE ARE STRUCKED INC. AND MAN INC.	S MAN INE TE	MTAITVELY PRO	POSTE DATA	SHABED DATA BUON SYSTEM			
Parameter		(Rawin ande	beta)			*	Flux	First	Min		
		Alf Te. p.	R. H.	At. Press.	Wind Dir.	Wind Speed	450	ž s d	Momentum		
Care location	Ę	(T	1		1	T	

				·				1			
Parameter	-	(Rawin ande Date)	Date)				11.14		Maria		-
		Air Te. p.	ж. Н.	At. Press.	Wind Dir	Wind Speed		, 10X	Management	-	
Geo location	E .	World Oceans				T		18.00			
Vertical layer		Sfr to	Sfe to 10 mb				200 to 400 m				
Range		-100 to	0.00	10 to	0.00	0 to	å or				
Kariman err		USWB		200	oor.	300 812	To be	ned			
		Standard					determined	200	8		
Luration of ob.	-8	15 ante					24 bre				
	Т										
	~ .:	300 n. mi			-	•	Varies - 3200 ob	200 oth			
Sampling		Mandatory					Bitce over oceans	05.882.8			
intensity		levels				4	To be determined	rzvined	1		
	Time	12 hrs				*	24 brs			30 d annual and parameters and param	÷
	Х. У	1 br					-	1			
. W. Tymen	2	1 hr									
Remarks							- 111.6	*			

K	Para moters	-				. ~ 	OCEANOGRAPHIC	APHIC									1			MAY 1860 ZO ANG S	9 V
/		ta C	1		1		-	L						1		2	METEOROLOGICAL	LOCACA E.			
	/	-6	goged	Selin'ty				Ambiont	Amb ent	Trens.	Wave II	Wave measurements.		₹ :::	Atmos Atmos	- -	***	1380-	Prento	100	101.00
CHLINOSTRATOR	Population					·	(mag)	Ě	9	b) Lanck	¥.	Per	ă	# E	alect .		persus	letion	3		
Geographic location	location	9	1.09) amag	1 to 60-5	America	To Count	Deep Ocean (60"N to 60"9VN American Count out to 400"	į		-	-	7	-		-	1	1				
Vertical layer	ř	Bertace	Sertace to 5000 m depth	derpth							1	÷	u nje						:		
9	100												• •			5	bucy me	Top of buty mast to surface	2		
(3-27: 3(M)	3(8)	9 °	3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0 to	28 00 to	-5 to	-5 to 0 to 10*	0 to 2.6 -80 to ly/m -20 db	-80 to	0 to	0 10	0 to 1 to 6 to 25 to	0 8			8.3 tc	25 to	3	12	. c	0 to
Mar error		:	0 03 bts	0 01 0/	1	50.00	2.				† ;				×	GE C	0.00	40.C 2014.H	in./ hr	ò	160 kts
(5-yr 80A)			A 14	§ ;	\$	7.60	<u>.</u>	2	€	%	0.26	0.2 ft 0.1 sec 5.	_	0 1.C	01 1/2	0.1 mb 0.2 °C 13	0.2°C	51			0.5 kts
Durution of ob-	-8	# H	Short par	inst. or Short period avg. (Represents	Wir seesthat	(Elve)	į						+		-				Б. A.		\$4. 1 0
	¥ ¥	s \$000 m	5 800 a. and 100-150 n. ma	150 n. ma					-				-					1			
Se month of	2	20 Sed.	A PBO Law	20 Set. LA PBO levels (* near bottom)	bottom)			- James					-						i		
	F	6 kred kre	1					87mAcc :			Surface		-+								i
Ob. synch. X.Y. (2, 10 min, (1 min)	X.Y. (2)	10 entis,	(1 min)										+								
* Includes	*Includes Measurements of Swells	merata of	Seeds										1								
																				-	

2. REPURED AMC # 93 REQUIREMENTS NSF, MIT-Thesenreb on internal Gravity Waves

Geographic location		Trupica	l, Subtro	Trupical, Subtropical and Mid-latti	id-latted	De of Wo	tudes of World Oceans	
Vertical layer		9 c to				Stc to		
		concom				bottom	Rotton	
Range		0 to	0 00 2 1	3 o 8 8 o 8		30.5	2 to 8500 part	
Maximum error		10).02 rts	0.02 irts 0 003 c		0.02°C	0.15 per	
Duredon of ob.		15 8	† †	1		10 sec	10 sec	
3	×. ×	4 buoys through	n 4 min	4 buoys in 4 min squares scattered throughout the area of interest	attered		ve dim os	
intensity.	Z	20 Levele		T		20	V/X	
	Time	24 hrs		1	2	24 hrs	24 hrs	
Ob grinch	X.Y 5	o prin	++4	•	+-	c min	ma	
	2	10 anc -	-	*		1.5 PBC	10 800	
3 RESULTS OF ASSESSMENT	A SSE SEM	ENT						

Requirements fully met:

Requirements partially mer and why All requirems non-little would be met with the exception of

• The maximum error for shitally and W. Press: Tentative "system" has more restitsful operational values of 0.010, and 0.15.

• The 0 min average duration of 62, for W. Press: Tentative "system" is 10 min or less.

• The 5 min X, Y, and 10 sec (2.5 system, of do: Tentative "system" allows 10 min X, Y, and 1 min (2).

• The Fine scale X, Y, spacin. Tertative "system" allows 10 min DO and 100--150 min to CNA,

• The vertical layer if bottom is below 5000 m. Tentative "system" only goes to 5000 m.

*These are 196; data requirements not refined

١		
ï		
ı		
ı		
•		
١		
;		
ì		
٠		
ı		
ì		
2		
1		
i		
١		

IENIATIVELI FROPUREU NUBB BENGRAU CAPABILITES	LI PRO	10 G 245	DESCRIPTION OF THE PROPERTY OF	NO CARAB	621153																
ā /	Parameters					o.	OCEANOCKAPHIC	APHIC					-			7	FTECRO	WETEOROLOGICAL			ļ
/		Curr Curr	Cert	1	Sound	Water	Water W. press. Amment Ambient Trans-	Amment	Ambient	Trans	Wave m	Wave measure rents.	_		A trace	Almos Atmos. Dew Inso-	Dee	laso	Practp		Wind
Character clettice	/ <u>3</u>	ŧ	;; 64 0		paeds	9 5	(depth)	light	noise	parency	Ht.	Per	Dir	temp	elect	нажи	point	lation:	3.	5	
Geographic bondium Deep Couns (60°N to 80°8) American Count out to 400 n. ml	a character	2	N.09) EME	V8.08 01 !	. America	n Conset or	ut to 400 n	III													
Vertical layer	1.	Burface	Burface to 5000 m depth	de yes							Burface	,	-			Topo	Ducy m	Top of bucy mast to surface	9.01	;	1
Range (5-yr 80A)	SOA)	3	o 06 to	3	4500 to	-5 to	-5 to 0 to 104 0 to 2.0 -80 to	0 to 2.6		3	o to	0 to 1 to 0 to	0 10	25 to 19 to	_	800 tc	ot 57	800 to -25 to 0.01 to	0.12	010	0 10
	_	.08	1	42 0/00	58 00 fpe	40°C	160	1y/m -20 db	-3€ -D	70%/m	100 ft 40 mmc 360. 60°C 10 kv	49 anne	980	3.00	10 kv	1099 mah		1099 mb 40*C 2 6 by/m	in./ br 360*		180 kts
Mex error		5.	0.03 (%	0.03 tts 0.01 0/06 1 fpe	<u>ā</u>	0 01.C 0 13	0.13	77	3 8	X.	0 2 11	0 3	٠	J. (A 10	0 1 mg	0.2 °C 13	13	0.01	. 2	0.5 kts
(59F 80A)			*	}							or 104 or 13	- 10 - 13							in. hr		or </td
Duration of ob-	18	last	Short per	last. or Short period avg. (Represent		i Qve								i :							
	×	2 800 B	5 \$00 n. my 100-150 s. mi	150 3. 061																	
De impliage 101 metty	2	20 Sec	IA 198C lem	20 Sad. IA PSG levels (+ near bottom)	bottom			2 levels			Bertaue										
}	r dig	c kraf kra	Ę										-								
Ob synch X.Y. (2) 10 min, (I main)	X.Y. 72	10 mbe.	(I main)																		

Oncerraphile location	location	MI-PIM	titodes o	Mid-latitudes of World Oceans	•			
Vertical layer	i.	Set to			offe to	Bottom		
Renga	The state of the s	98 58	0 00 2 13 3 13	30 to 38 o, 38 o,	- 2 to 30°C	0 to 8500 pst		
Maximum error	rror	10.	0.02 kts	3.02 Lts 6.003 0 to	0.02°C	0.02°C 0.03 pm		
Duration of ob-	ŧ	5 outs			5 rain	5 min · 20 min avg.		
	×	4 · square each 600 1	7e 8a ch			•		
Se repling Interestly	2	20 gril.			20 lvls	Bottom		
	Time	24 brs		•	24 Mrs	24 hrs		
g g	χ×	5 mdn		•	ें मध	S ada		
	2	10 sec		*	10 aec	10 tec		
17 27 10 10 10 10 10 10 10 10 10 10 10 10 10	1 0000	100						

RESULTS OF ABRESSING

Requirements fully met:

Begaineness partially most and why All requirements listed would be most with the exception of

• The mainthm error for Sakinity and W. Press. Tentative "system" has more realistic operational values of 0.010_{.00} and 0.1%,

• The St man (3... Y) and 10 sec (2. synch. of ob. Tentative "system" is 10: in or less,

• The St min (3... Y) and 10 sec (2. synch. of ob. Tentative "system" is 10 in in (X. Y) and 1 min (2),

• The X, Y ampling internally Tentative "system" has one usy each 500 n. mi.

• The varietal layer it location is below 5000 in. Tentative "system" only goes to 5000 m.

"These are 1947 data requirements, not refined

ASSESSMENT SHEET FOR REFINED DATA REQUIREMENTS

Ē.	Parameter					0	OCEANOGRAPHIC	A PHTC								Z	TEORO	METEOROLOGICAL			
/	/	Carr		* linity	Scrad	Werer			Ambient	Trans-	Ware in	Ware measurements	it.	Air	Atmos	Atmos Atmos Dew Inso-	Dew	1280-	Precip	Wind	Wind
Characteristics		į	1			<u>ş</u>	Series Carlot	Ķ. -	00 8 8	parency	Ŧ	Į.	ă	a de de	e iect.	breas	point	tation	32.	#	2000
Geographic Inexticu		3	Decp Ocean (80°N to 40°		A America	a Count of	as Count aut to 400 a mil	F]	-				1	1				
Vertical layer		Sertere	Surface to 5000 to copy	(B)				-		<u></u>	Surface		+		1	Total	AONO.	Two of bucy areast to surface	2		
Halage (b.yr 80A)	804)	6 50 8 60 8 60 8 60 8 60 8 60 8 60 8 60 8 6	0.01 10 and 10 a	8	45:00 to	-5 to 0 to 0*	1	9 to 2.0 -80 to	1	0 8 20 7 20 7	2 8 5	3 0	0 to -25 to	0 to -25 to 0 to	_	800 to	-25 to	800 to -25 to 0.01 to	0.12	3 6	0 to
Max error		:	0.03 to	0.03 kts 0.01 0/00 1 tps or 1%	4	0 0.00	9 14	5:	e e	\$ 50	0.2 th 6 1 see	-		3·1·c	24 10	0.1°C 01 kv 0.1 mb 0.2°C 19	0.2.0	E 2	0.01	£	0.5 kts
Durance of ob	8	3	Bort per	last or Boat period avg. (Represents.						-1			-			1	-		10.7		t
	×	× 600	5 600 a. med 100-150 a. ma	-150 a. PE			1	1		The second second second second			-					***************************************			
lateracity	,	2	IA PBO lem	20 Sed. LA PBO Levels (pagz t (knm)	(aug			S Ervela	-		Charles		-					-			
	ž	Sara S	2			-	!	-	1				+					-			
Ob. syme X.Y. (2) 1 mats, (1 mads)	X.Y. (B	1	(charle)					-										No. of the last of			

Geographic location	location	Vicinity	of Summer	Vicinity of Santa Barbary Changes Inhance Confession	i fallende	Conference of the second secon		-	
	-					, CENTRAL			
vertical layer	10		3 5 5 5	9	8	9		-	
			bottom bottom	botton	POCTOR!	200	Sfc		Src
Plane				33 %	9	as the same of the		T	
			3	. Se	5		3 2 2		, to
Mari Same Jr. 100	17.505							-	
			0.1	0.1 kts 0.01 g	0.2°C		èv		
Darragon of the	8		2 10	31 %	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
			ij	min	ě		01 ¥i		21 V:
	× ×		N ₂	1 2			ala		op.
					<u>.</u>		82		100
State of the second second	1	1	Si Si	Deline.	att to		7 4 4 4 5		
inter of th	N		10 Freis	2.	01			. i	
	2		1		-		W.N.	- !	¥ / K
	!		8 14 14	o pre	6 67		4		2
	A Y		¥ , ×	*/X	1,7	The state of the s		7	
With a R		+	1	6/15	4/2		K/X		V/Z
			V/X	٧/٧	V/V		X / 1.4		

RESULTS OF ASSESSEDIT

Requirements fully met.

Exquirements partially not and why All Proutements listed in 2 above would be met with the exception of

The "not stated" X, Y specing: Tentative "system" may be some grone.

The lo larvis for Z sampli g intensity. Tentative "system" would have k as than 10 keys's in most of the area of interest.

See Set's: Some measure of see state can be approximate. If him wive investigation whether the coding will be exactly what is wanted must be resolved.

Requirements not must and why

"These are 1967 data requirements not refined

· ·

Page 2

PEFINED AMO # 97 REQUIREMENTS (Continued)

CREY ANE	A" PARA	"GREY AREA" PARAMETERS NOW IN QUESTION FOR THE TENTATIVELY PROPOSED DATA BODY SYSTEM	IIVELY PROPOSED DATA BOOY SYSTEM	Hevised 20 Aug 68
arameter		Set State		
Gen location	8	Vicinity of Santa Barbara Channel Islands	Islands Calif.	
Vertical layer	iyer	38 0		
Renge		Cod*		
Maximum error	error	V: 5		
Duration of or	8	s 10 min		
	×	Not stated		
Bampling intensity	2	V. 2.		
	, i	6 hru		
4365	×	Y/ X		
1 /4	7	V/ X		

Hemarks: (rightal Sea State measurement I. a. : anual operation which can be approximated by a combination of "system" measurements

PARAMETERS CONSIDERED BEYOND THE S-YR STATE OF THE ART FOR THE TENTATIVELY PROPOSED DATA BUOY SYSTEM

Parameter		 							
inco location	6								
Vertical layer	iyer			-	-		<u></u>		
Runge			The same of the sa						
Maximum error	errox								
Deration of ob-	8								
	×	+							
Sampling Interally	2								
	Ě								
(ib synch	×								
	T							 	

ASSESSMENT SHEET FOR REFINEL DATA PEQUIREMENTS

TENTATIVELY PROPOSED NDSS SENSING CANABILITIES	TLY PROF	ORED NE	YES SERIES	F'C CA! AB	SELLI														Revi	Revised 20 Aug '68	89. 3 81
*	Parisoner					lo lo	CCEANOGRAPHIC	PHIC					-			MET	METEOROLOGICAL	GCAL			
/	,	, Ta	ur Curr.	Salieiry	a de la composição	Water	Water W press Ambient Ambient Trans. Wave an ast rements.	Ambient	Ambient	Trans	Wave a	att in the		11E Atman stance	mos. 1	noe.	flew Indo-	-08	Precip.	Wind	Wind
Characteristics	ace.	à	e de		1	a E S	mermo, idepthi light	hight	9 5	parency	Ĩ	Per		्रेस श्र	<u>ā</u>	bress p	point la	lation	3	dir.	absec
Jengraphic location Deep Openia (60*N to 60*8) A American Const out to 109 n m	loomtion	O dead	. 6 J	N 20 80-8	America	D Cone: 3	her out to 109 n	=					-		ŀ		-		1		
Antecoal layer	Ř	Series.	Surface to 5460 m depth	474			:				Surface		-			Topicb	Top . buoy mast to su.	to ster			
Range (5-71 BOA)	₹ 80 4	0 %	0 to 0 05 tu, 0 to 350° (20)	0 (% tv. f to	4500 to	5. to	-5 to 0 t to 10 10 20 0 10 0 to 40 0 0 to 70 0	3	-20 db		0 to , to	51 6	0 to 25 to			800 to -25 to 1 01 to	-25 to 1 01 to	9	0-12		0 to
Max error		.:	0.03 E.	0.03 E. s 0.01 0/00 1 tps	å		0 13	1.	€ 5		0.2 ff	0.2 ft 0.1 Sec 5.			c غ	.01 ky 0.1 mb 0.2 °C 13	2.0				0 5 kts
Ourantes of ob	8	last on	21.0	last or the experience age (Representative	Transmitte #	1			7	7	or or or it	i ic	+	-	-	_	-	-	10. hr		or 37
	¥.×	2 630 a	185	5 600 a m 106-150 a.			-	1		!	!	; i			:						
lateratty	7	20 Bed	IA PBO lev	20 Sed. LAPSO levels (* near bottom)	bottom			2 Jevels			Sur'are		-								
	1	un youn s	5								:		+								
Ob synch. X.Y. (2) 10 min, /1 min)	X.Y. (2)	10 mtm.	· 1 Pkb)										-								

*Includes Measurements of Swells

* REFINED AND 4 99 REQUIREMENTS BOF, Honolulu - Baste Water Mass Study 3

Geographic location	location.		C Occurs 0	Pacific Occan 0"-35"N and .30"	W-180				
Vertu.al layer	ış er	# c to # 500 m		•	20 °C to 1500 m	1 200 E.	Sfe to		-
Name of		0.0	0.1 to	3.13	0 0 0 0	0 to .	0 to 70% m		+
Maximum error	• r r (x	5	0 03 kts or 15	1	3,10.9	7.2	5		
Ew adde of the	8	01.4			67.7	> 10	10	,	-
	λX	5000	of an major	50 and in major curdents 500 to 800 n. mi elsewhere		The state of the s	II.in		
Trigon of the	2	Ced VI	IAPBO Levels Dut		T				
	Ę	24 hrn	24 hrn	 	24 hrs	24 hrs	24 hrs		
(%) gynch X, Y	×	10 mts		F	10 mus	10 min	10 min		
	2	1 min	-		1 min	mim	l min		-
PESULTS OF ASSESSMENT	CAF ASSETS	THE HIL							

Requiriments tally met

Requirements partially met and why. All requirements its ted in / above would be met with the exception of a The 80 n mill specing is major currints. Fostative "eystem" has specing of about 800 n mill.

The denser 2 specing in their modifier. Tentative "eystem" has only. Apply levels.

Service Committee of the service of

Regularments not most and why

• (revigen Uncertainty about ob..rcm buor unattender for long periods

4

KOREY ARŁA., PAKAMETERS SOM IN QUESTION FOR THE TENTATIVELY PROPOSED DATA BLOY SYSTEM 0 to 6
0 1
mi 1
v 10
mi 1
v 10
mi 1
v 10
mi 10 currenta
Go to vijo ni elaewhere
LAPien levela iki Same as page 1 Sfc to 1500m 1 per wit 10 min. I min , in Maximum orror Vertical layer Dersitor of of Owe location 1 Parameter Sampling interestiv Rep

Sevised 20 Aug 68

REQUIREMENTS (Continued)

REFINED AMO 4 9"

Parameter	-										i						
AFC HOCALIGN	Ī		······	4	1	 -	-				-1	:	_	-			
Vertical layer				-		 -			!	-			-	-		-	
Parage			:	•	 	+			ļ	+	:	1				:	1
Mazirbum error				+		<u> </u>				+	 		-	+-		-	
Persisten of 90						-	1			-			+				
<u> </u>	h			ļ 		- +				···• · ·				•••		:	1
Sampling intento	† ~ · · · · · · · · · · · · · · · · · ·	:	-		†	· •	†		; 		!		-		The state of the s	<u> </u>	Ì
	å	+	-	<u> </u>	-	 •	-	1	;	†	+	1	-	+-		•	İ
2 7 E							. •			-+	-+-		+	-	:		
	,									+	•			7			-

Rez. krie

ASSESSMENT OF A LEGH POLINED DATA REQUIREMENTS

				1671A17 SELL PROPERTY NOR SERVED AND CAPABILITIES	R LA LIE														Ž	Revised 20 Aug '68	5. MY
د زر	Per seeter						OCEANORIRA PHRO	A PHRC					-			1	ETEORO	METEOROLOGICAL			
		<u>ا</u>	Curr Curr	P Hate		¥3dar	Without W press Ambaent Ambaent Trans	Ambhent	Amenda	T Table	E SYEW	Wave measurements.		Alr	Atmos Atmos		200	Ibeo	Precto	Wind	7
Carneto Hath						j I	í de la companya de l	Ę.	1	Bolles parency	Ŧ	7	ā	e e	- Part	******	potne latum	lation.	Į.	ŧ	
's ographie bester		4	-09E	Dies Cont. (60'N to 10'SYN American Const ont : 480 n au	A merica	LE CORUM O	1 400 5	PAG.				1		Ŧ		—					
Vertices layer		#	Marie + to 5488 as depth]						Bertace					100	buck fr	Top of theor meet to surface		;	
Man 15 yr SOA)	r MOM.)	9 9		. 8	3 8 9 2 8 3 8	: -	0 to 19*	2 2	3 0	6 to	2 2	1 to 1 to 25 to 3 to	1 to 25 to	25 to		800 to	25 10	25 to 0 01 to	6.12 0 to	-	0 0
Mar error	1	:			. 1	***				_			-	-	+	Ē	ن ا ا	E 410 Z 0 14 E	in br	.096	160 Kts
C. TE BOM.	-			8			*		6	Z	or 178 or 13	or 1:15 or 14		<u>-</u> ر.	1 0	- c	0.2°C 19	±.	0.6) IB.: hr	:	0 5 Kts
Derakon of &		5	j	had or there period any (Represent	. 2	Ĩ		-			7	-	+	-	-	7	- !	- 1 :		7	5
	*	3	\$	· *** - 100 - 130 - 1			:						-	-	:	:					
	2	1	IA PRO IS	20 fled, IA PWG jerreia (* mear bottom,	bottom			2 bevole	-		Prifere		-	:						:	1
	1		i Çi				1	*		-			+		1	:		1		-	
(D symmet) N.Y. (Z) 10 mate, (1	X.Y.(2)		1				1			:	!		+	1	-				The state of the s		
				-			-						_								

2 REPRESED AND A PARCELLER MEMORITY BY A VALUE - Managements on Announced of Value of Announced and Announced Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Announced and Anno

Congruent Langer on	Consett on	. 14.4	Cantian	Est - Cantinental Back in Oak of		e appropri	Berlag	A 250	P X Q	Alastes - Berlag See and DO N of SO'N and E of 185"W	d E C. 16	A 21								
Verth	ţ	3			: :	3	: : 			!	<u> </u>	-	<u> </u>		. J. 6	316		-	*	3,6
- P	:	Ž			•	2 4	<u> </u>	-				÷ .	<u>;</u>		ac N	E Z	+		g Z	
Mestines error		8		•	<u>.</u>	¥ z	+	<u>+</u>	<u> </u>	1	-	+	; -	-	S.X.	N. N.	9	+	Material No.	A stated
1		j		: :				- +	+		:	·-•	-	+	eteted	3	· ·		state	
	ì	The Sand		•									and the sales of		Not atsued	No.	₽	: 	ALL DA	Ne.
	-	Varia.	from a	Varies from a few makes in Est	In Eat	* 0 *	3000	3	dia ata	waters.	ر د د	0 100	T THE C	\$0 40 306 p red to granted waters, ito 300 to 1000 n mi in the deep ocean	, "	ne Map for	np for exact locations)	+	+-	
Tr. grow a	~	0, 350, 1	0, 3-5, 1 ** 200, 300 00	第 (8)			•	·•·	- + -		: :			•		+	- + +		+	
		REAL PROPERTY.	*			[-	:	 	+			+			 V/Z	4/7			₹/X	¥
			1	•	1										10 Z	Z	• •	•	Not	+
1).).t	Not aftering	Sa Grid		•	8		- -				-+-	-	+	218 1	itate.	÷		S TT	
d diverge	× _	Total Control		1		C.		+	-	ŧ -				-	rinter?	A STATE			in a	Will b
	-			*		1		-					_	_	· · ·	7			*	

Rampel Personnes Antily meet

All require mests listed to Salvas would be mast with the exception of Temberon "yvatem" may bod attinsy some of these registraments if they are more stringent than "system" Maquire presults graffishly man and why a The That stained the distribution

Requirements and man and why All requirements in soft arises and man above valeta reliber (0 n m) of above.

Tendad: 1 "evelen." (ocations start about 25 n m) off the count

APPENDIX V

TENTATIVE APPROACH FOR THE FST(MATION OF RELATIVE VALUES OF OPERATIONAL PARAMETERS AND LAYERS

APPENDIX V. TENTATIVE APPROACH FOR THE ESTIMATION OF RELATIVE VALUES OF OPERATIONAL PARAMETERS AND LAYERS

Up to now a baseline set of environmental parameters has been established for the National Data Buoy Systems by a process of interviewing user agencies, collating the results and determining the degree of commonality and feasibility for collection by data buoys. These agency data requirements, although further refined, have been determined only on a "YES-NO" basis and no attempt has been made to rank parameters by their relative value to the agency in the performance of its various missions. In order that the National Data Buoy Systems development planning can be based on as logical a foundation as possible and to insure that the resulting buoy systems are responsive to the nation's important data requirements in a cost-effective way, it is now necessary to obtain users' estimates of relative values of the various requested parameters.

Some parameters have greater "worth" than others, either because more agencies need them, or they are more essential to satisfying mission requirements. A properly responsive data collecting system sould satisfy these requirements to a high degree. Whether other less important parameters should be collected can then be decided on the basis of their incremental worth and the incremental cost of collecting them. Unfortunately, no convenient analytical means exists for determining the worth on a purely objective basis, at least within the time frame involved. The approach to be used, then, will be to take advantage of expert judgment expressed in the form of subjective evaluations.

By estimating the relative values of marine environmental parameters, the users will help establish those parameters which make up the essential minimum set that must be gathered by some means and must be considered in the hardware development plans for the initial buoy systems. This procedure will also help describe a logical path for development plans beyond the initial systems to meet the longer range, less critical requirements.

In order to make this initial attempt at ranking parameters meaningful, it must be kept comparatively simple and it must be consistent from agency to agency.

Not refingly, the releasing assumptions and ground rules should be inflowed by the estimators:

- 1. Each agency will make two ratings of the parameters. The first rating will be for all categories of oceanic missions, while the second rating will be for atmospheric missions. All parameters will be rated for each of the appropriate layers by each of the categories of missions.
- 2. The parameter characteristic requirements (accuracy, spatial distribution, etc.) are assumed to be met by the proposed system s.
- 3. Parameters should be rated without regard to the platform to be used to collect the data.

For the evaluation, a list of marine environmental arameters has been developed from a refinement of agency requirements and attached to this cover sheet for assignment of relative values. A system has been devised by which quantitative values can be assigned to four subjective criteria in which a parameter can be placed based on its relative importance in fulfilling an operational need. Although many parameters may be absolutely necessary to satisfy a mission or important to satisfy a mission, they may not have the same value relative to each other. Therefore, each of the two most important categories have been broken down into two relative values each. It is necessary that the parameters be carefully weighed in order to make an evaluation of their value meaningful. The four criteria, with their respective values are:

<u>Value(s)</u>	Criteria			
5,4	- Must have to satisfy missions			
3,2	- Important to satisfy missions			
1	- Useful to satisfy missions			
0	- Of no value to satisfy missions			

Blank spaces are provided at the bottom of each list for including any parameters that are necessary to meet oceanic or atmospheric missions that were omitted in this

instring. The all long that the relative calls lot a name of a may change at inflored levels, the attached list has been iroben down into seven vertical favors with approximate limit, as follows:

Upper air:

- 1. 100,000 to 30,000 feet

2. 30,000 to 45 feet

Surface: air water - 3. 45 feet to 0

4. 0 to 10 m

Sub surface:

- 5. 10 m to 500 m

6. 500 m to 5000 m

7. At or near bottom, regardless of depth.

Each agency is requested to make separate oceanic and atmospheric mission value ratings of the seven listed layers in a manner similar to that for the parameters. This rating will be done on the separate table at the bottom of the rating sheet.

Any questions that arise concerning the response to this form should be made by phone to Commander MORRILL of the Coast Guard Project Management Office.

This represents the first attempt at estimating the relative values of operational parameters within vertical layers. Future refinements may still be required to establish the total set of parameters within layers to be measured by the initial buoy systems. Various negotiations with agency representatives may still be required once the completed forms have been analyzed. It is recognized that there are limitations to this approach but the results should provide a guide for initial data buoy system development efforts while the federal government continues to refine specifics on data use and user benefits.

It is requested that the two completed forms be returned by 16 August 1968. Please send the completed responses to:

> CDR P.A. MORRILL Chief. Requirements Division National Data Buoy Systems Project Management Office, Suite 400 733 15th Street N.W. Washington, D.C. 20005 Tel. No. 964-2909

,	<u>a</u> :	1			è î	2		
	100, 000 30, 000	45 to a	- to 1:-		0 to E	10 61		¥ ::
Farrmeter				Parameter	1		†	†
Ozone Content				Ambient Light				
Cosmic Hadiation				Ambient Noise				
Cloud Tops				Current Direction				
Cloud Bases				Current Speed				
Cloud Amount				Salinity				
Wind Speed				Sound Speed		[
Wind Direction				Transparency				
Air Temperature				Water Temperature	1			
Height				Prepagation Loss				
Atmos. Pressure				Depth] -	1
Dew Point, Humstity				Water Pressure				
Atmos, Electricity				Oxygen				1
Insolution.				Carbon Dioxide	-		1	!
Precipitation				Phosphates				
Visibility				Nitrates			!	
Magnetic Field				pH				
i)eclination				Nutrienta				
Magnetic Ffeld				Plankton		7		
inclination				hierophyl				
Magnetic Field				Biological Growth				
Intensity				Phone of Fish		1	T	!
Gravity				Vertical Current				
Wave Period		William.		Bottom Composition				
Wave Direction	M. This.			Photos of Bottom	111	4 11111		
Wave Height		3		Bathymetry	113	CHI.		
Tidal Fluctuation				Sediment Deposit		Willia V	Hilli	

Layer	Value
100,000 to 30,000 feet	
30, 600 to 45 feet	
45 to 0 feet	
0 to 10 meters	
10 to 500 meters	
500 to 5000 meters	
At or near the Lattom	

Criteria for Estimating

Relative Values

Value Criteria

5,4 Must have to satisfy missions

3,2 Important to satisfy missions

1 Useful to satisfy missions

0 Of no value to satisfy missions

موقور المراجع والمواجع المواجع المواجع المواجع المواجع المواجع المواجع المواجع المواجع المواجع المواجع المواجع THITUD STATES CONST CUARD 41.00 APPLICABILITY OF NATIONAL DATA BUOY SYSTEMS TO REFINED NATIONAL REQUIREMENTS FOR MARIXE NEWWORDLOGICAL AND OCEANOGRAPHIC DATA DESCRIPTIVE NOTES (Type of report and inclusive dates) FINAL REPORT; TWO VOLUMES
AGTHORIST (First name, middle initial, last name) THE TRAVELERS RESEARCH CENTER, INC. HEPORT DATE TH, TOTAL NO. OF PAGES 76. NO. OF REFS VOL #1-154/VOL# 2-143 October 1968 UNKNOWN 98. ORIGINATOR'S REPORT NUMBER(S) VOL #1 7493-332a DOT-CG-82504-A b. PROJECT NO VOL #2 7493-332b 9b. OTHER REPORT NO(S) (Any other numbers that may be ussigned this report) 13. DISTRIBUTION STATEMENT This document has been approved for public release and sale; its distribution is unlimited. 11. SUPPLEMENTARY NOTES 12. SPONSORING MILITARY ACTIVITY UNITED STATES COAST GUARD

\ 11e. Volume I - This report documents the 1968 refinement of requirements for marine meteorological and oceanographic data-initially compiled during the 1967 Study of the Feasibility of National Data Buoy Systems -- and shows the applicability of certain postulated National Data Buoy Systems sensing characteristics to a subset of the refined data requirements. Included in the refined requirements to support national operational and research activities are physical, biological, chemical, geological and radiological parameters which are to be measured throughout the world's oceans from the ocean bottom to 100,000 feet in the atmosphere. The data requirements are projected from the present to as far as 15 years into the future.

The study presents a subset of 20 parameters suggested as being representative of the basic sensing characteristics of a future deep ocean or coastal North American National Data Buoy Systems. Estimates of relative values of parameters and observing layers are also included in this study as part of the documentation of the ongoing effort to provide a base for the assessment of hypothetical technically feasible sensing characteristics within the 5 year state-of-the-art.()

Volume II - This report contains five supporting Appendixes for Volume I.

DD .form..1473 (PAGE 1)

UNCLASSIFIED

Security Classification

S/N 0101-807-6801

13. ABSTRACT